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Thomas Duff & Co and the Jute Industry in Calcutta, 1870-1921
Managing Agents and Firm Strategy

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Managing Agents and Firm Strategy.

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DECLARATION OF THE CANDIDATE

I declare that I am the author of this thesis, that I have consulted all references cited, that I have carried out the work reported in the thesis and that no part of this thesis has been previously accepted for a higher degree

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DECLARATION OF THE SUPERVISOR

I hereby declare that Alexis Wearmouth has satisfied all the terms and conditions of the relevant Ordinance and Regulations for the degree of Doctor of Philosophy.

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Abstract/ Synopsis

This thesis is about the nature of the rapid growth of the jute manufacturing industry in colonial India in the age of the "imperialism of free trade". It seeks to understand how the managing agents who controlled the jute mill companies in Calcutta internalised a competitive advantage that generated lucrative rents through a case study of the history of the Dundee-based managing agents, Thomas Duff & Co.

The thesis argues that the industry experienced a pattern of extensive growth with static technology that led to rising costs and pressure on profits and dividends. Nevertheless, the pattern of entry into the industry indicates the existence of institutional barriers to entry. Managing agents like Thomas Duff & Co were able to take advantage of and shape these barriers through strategic behaviour. They created a company form that allowed the structuring of incentives to reproduce a functional managerial hierarchy and renew their competitive advantage over time.

Strategic behaviour by the founding directors of Thomas Duff & Co extended to actively shaping the business environment in which the firm operated by anticipating and neutralising threats to their control of the directorate, intervening in the supply chain to manage costs and cajoling other managing agents to cooperate to manage competition. The success of these strategies led to growth, which entailed the creation of a popular base of shareholdings. This dilution of formal ownership proved to be compatible with retaining control and generating rents while minimising risk.

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Introduction

From its inception in 1855, with the setting up of the first jute mill at Barnagore by the Borneo Company, the jute manufacturing industry in Calcutta experienced rapid growth, coming to dominate world production.[1] By 1900, Calcutta mills consumed 38 per cent of Bengal's raw jute production, which monopolised the world supply.[2] The profits enjoyed by the industry during the First World War ensured dividends of two hundred per cent for investors and inspired a rush of investment to set up new mills in the post-war period.[3] B.R. Tomlinson has estimated that: "By 1921, jute was in first place [as an export-earner] representing 26.5 per cent of India's exports".[4] The jute mills were an important factor in the growth of an urban, industrial sector in India from the late nineteenth century, employing 339,000 workers by 1928.[5]

Stewart considers the "relative neglect" by an older generation of historians of this industry compared to the attention given to cotton manufacturing in Bombay to be surprising in the light of jute's contribution to Indian export earnings, which was crucial to the whole imperial structure of the British economy.[6] Thus, the export of raw jute and jute manufactures made an important contribution to the perennial unrequited export surplus of the Raj, which permitted the British economy to continue consuming 'beyond its means' - famously described as the

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[1] D. R. Wallace, *The Romance of Jute; A Short History of the Calcutta Jute Mill Industry, 1855-1927*, (Second Edition, London, 1928), p. 106.

[2] Government of Bengal, *Report of the Internal Trade of Bengal for the Year 1899-1900*, (Calcutta, 1901).

[3] Bagchi, *Private Investment in India*, p. 276; G.H. Le Maistre, *Investors India Year Book, 1919*, (Calcutta, 1920), Section III, "Jute", pp. 68-111. Henceforth "IIYB".

[4] B.R.Tomlinson, 'India and the British Empire, 1880-1935', *Indian Economic and Social History Review*, Vol. 12 (1975), p. 340, cited in Gordon Stewart, *Jute and Empire: The Calcutta Jute Wallahs and the Landscapes of Empire* (Manchester, 1998), p. 12.

[5] Stewart, *Jute and Empire*, p. 16.

[6] Tomlinson, 'India and the British Empire', p. 11.

"drain of wealth" by early Indian nationalist commentators such as Dabodhai Naoroji.[7] More recently, the industry has received considerable attention from business and labour historians making use of company archives and government records to explore a variety of themes pertinent to the study of the development of the global economy and Britain and India's respective positions within it.

Unlike the cotton industry in Bombay, the jute industry in Calcutta was dominated by European businessmen resident in Calcutta, with a preponderance of Scots. The technology and knowledge of the industry was imported from Dundee, the birthplace of the industry in the 1840s. Supervisory and technical labour was recruited from Dundee and its environs from the Calcutta industry's inception. In contrast to the Bombay cotton industry, cheaper indigenous supervisors and engineers were never substituted for the Dundonians before independence, reflecting a particular racial division of labour specific to Eastern India, where British colonial rule was most entrenched. The capital invested in the industry to finance its growth tended to take the form of public limited companies floated as "Rupee companies" on the Calcutta stock exchange. There were a minority of "Sterling companies", whose share capital was raised in London, Glasgow and Dundee, which participated in the growth of the industry through foreign direct investment. In the period studied from 1870-1921, Indian shareholders were initially a small minority but became increasingly important, as Marwari businessmen used the dominance they would establish in the raw jute trade during the war as the basis to enter jute manufacturing at the end of the war.

This thesis will analyse the economic history of the industry up to 1921. It will focus on a case study of a Dundee-based firm, Thomas Duff & Co, to study the industry as a whole.

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[7] Dadabhai Naoroji, *Poverty and Un-British Rule in India* (London, 1901).

The Political Economy of Empire.

Any historical account of the jute industry in Calcutta necessarily situates itself – whether explicitly or implicitly – within a broader interpretation of the political economy of the Empire within which it developed. The role of the Raj has been ascribed malign characteristics retarding economic development by Nationalist historians while some British accounts of the period see its influence in benign terms. Gordon Stewart, in his work *Jute and Empire*, finds this 'a tedious, argumentative framework for studying Indian economic history'. He appeals to the authority of more recent historical work, which - citing Chakrabarty - he posits to have 'advanced beyond the predictable, blame-assigning categories of the old debate [and] broken with these constricting polarities to look at the Indian economy in a "broader context of colonial political economy and capitalist world markets".'[8] If the second volume of *The Cambridge Economic History of India* which covers the period from 1750 may be taken to be representative of the kind of more recent work that Stewart has in mind, there are serious objections to be raised to Stewart's formulation of the problem.[9] It is questionable whether nationalist critics of and British apologists for empire neglected the broader context to which he refers. Rather, they took opposing views about what could be inferred from it. Moreover, one of the difficulties with more recent work by historians of British India is precisely the neglect of this broader context. As Irfan Habib, editor of the first volume of the *Cambridge History*, pointed out, the structure of the second volume breaks down the study of the Indian economy into a series of regional and sectoral studies that militates against considerations of the broader context.[10] In part, this is a function of the proliferation of more detailed, specialised studies of different aspects of the economy in British India, as is this study. Clearly,

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[8] Stewart, *Jute and Empire*, pp.23-25.

[9] Dharma Kumar and Meghnad Desai (eds), *The Cambridge Economic History of India. Vol.2, C.1757-C.1970* (Cambridge, 1983).

[10] Irfan Habib, 'Studying a Colonial Economy—Without Perceiving Colonialism', *Modern Asian Studies*, Vol. 19, No. 3, (1985), pp. 355-381

such work has added substantially to our knowledge and is essential to inform the work of synthesis, which Habib wishes to see. What questions do more general histories of the political economy of empire in India pose for the study of the jute industry and how should they inform this study? In turn, what contribution can the study of jute make to our understanding of the political economy of empire?

At the most stylised level of abstraction, histories of this political economy have located British India within the wider imperial context as a market for British manufactures and an exporter of raw materials to Britain and other industrialised countries in the first half of the nineteenth century. From the second half of the nineteenth century, Edelstein has examined how the imperial periphery served an important function as a destination for the foreign investment of capital accumulated in Britain seeking profitable investment opportunities overseas but that these investments were largely concentrated in more developed parts of the British empire in the colonies of settlement and largely bypassed British India.[11] Clearly, the British capitalists who invested in the Indian jute industry, which exported jute manufactures from the colonial periphery to compete with manufacturers in the industrialised countries, do not sit comfortably within this framework. Given the generally accepted association between development and the export of manufactured goods, it follows that the history of jute manufactures is of considerable interest in studying whether British rule promoted or retarded Indian economic development by establishing the basis for industrialisation. To consider this question with any precision requires greater attention to the economic mechanisms through which British rule functioned.

[11] Michael Edelstein, *Overseas Investment in the Age of High Imperialism: The United Kingdom, 1850-1914* (London, 1982)., ; see also S. B. Saul, *Studies in British Overseas Trade, 1870-1914*, (Liverpool, 1960); P. J. Cain and A. G. Hopkins, *British Imperialism: Innovation and Expansion, 1688-1914* (London, 1993).

As the leading industrialised nation, Britain benefited from what Robinson and Gallagher term 'the imperialism of free trade'.[12] This system subsumed a variety of categories of imperial rule or influence – from formal, direct rule in India to informal control in China to settler colonialism in South Africa and Australia – and benefitted a number of different interests within the British economy – from textile manufacturers to merchants and financiers, their relative weight in the process of the formation of imperial policy being the subject of much debate.[13] Within this complex system, British rule in India may have developed in an ad hoc fashion from the opportunism of the East India Company in the eighteenth century up to the imposition of direct rule after the Mutiny of 1857, but it came to occupy a crucial place in the imperial system.

A strategically important base to project military power as an auxiliary to free trade in China and elsewhere in the region, it had the advantage of supplying the troops for its own and others' subjugation while paying the British for the privilege through the mechanism of the Home Charges paid annually by the Government of India. This entailed the raising of revenue through the regressive taxation of the peasantry – the Zamindari system in Bengal and Ryotwari in other regions – which refined the Mughal system of military feudalism through the greater administrative capacity of the Raj, setting the revenue demand at a high and inflexible level. The harshness of the revenue demand contributed to the devastating famines that took place from the 1870s to the 1890s; life expectancy declined 20 per cent over the period from 1871 to 1921.[14] Included in the Home Charges were the repayments on the loans raised in London for the building of the Indian railway network. These loans were guaranteed by the

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[12] John Gallagher and Ronald Robinson, "The Imperialism of Free Trade," *Economic History Review* (August 1953) 6.1, pp 1–15.

[13] P. J. Cain and A. G. Hopkins, *British Imperialism: Innovation and Expansion, 1688-1914* (London, 1993), Chapter 10.

[14] Mike Davis, *Late Victorian Holocausts : El Nino Famines and the Making of the Third World*, (2000); Habib, 'Studying a Colonial Economy', p. 373, citing statistics from Kingsley Davis, *The Population of India and Pakistan* (Princeton, 1951), p. 62.

Government of India at a rate of return above the prevailing market rate and constituted by Rs 350 million of the total capital invested in India, dwarfing the Rs 50 million invested by the private sector, in which the British managing agents predominated.[15] Together with some investment in irrigation in the Punjab and a few other regions, this was the sole instance of investment in industry by the Government of India on any significant scale. Both irrigation and the railways promoted the incorporation of the agrarian hinterland into the world economy as a supplier of raw materials based on the operation of market forces of supply and demand. As well as being extremely profitable for risk-averse portfolio investors, the railways provided an impetus to British heavy industry as the railway boom in Britain itself was exhausted. The potential for positive linkages with nascent industrial sectors in India in machinery and steelmaking was never pursued.[16] Rather than prevent famine by allowing trans-shipment of food grains from surplus to deficit regions, it facilitated their export abroad, as India became a major supplier of grain to the industrialised countries, as testified by the fortunes of firms like Ralli Brothers, which relocated there from Southern Russia towards the end of the nineteenth century.[17] The rolling stock for the railways' operation was turned over to the managing agents, which charged much higher freight rates within India than for shipments to Indian ports for export.[18]

In exchange for the export of food grains and raw materials from the agrarian sector, India became by far the most important market for British exports of cotton manufactures from the 1820s. From being the world's leading producer of cotton manufactures in the eighteenth century, India's large handloom sector could not compete with Manchester's mechanised output without tariff protection, leading to deindustrialisation. One indicator of this process is

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[15] Irfan Habib, *The Indian Economy, 1858-1914* (New Delhi, 2006), pp. 23-29.

[16] Bagchi, *Private Investment in India*, Chapters 9-10.

[17] Anon., *History and activities of the Ralli Trading Group: commodity merchants for 160 years* (London, 1979).

[18] Bagchi, *Private Investment in India*, p. 22.

the decline of the urban population through the course of the 19th century, with cities such as Oudh and Patna losing up to 50 per cent of their residents to the countryside.[19] India' regional trade – and related sectors such as indigenous banking and shipping - was displaced by the British managing agents.

Throughout the period of British rule, India ran a large export surplus on the balance of payments. The East India Company pioneered the export of opium to China. As demand for opium receded towards the middle of the nineteenth century, indigo exports took up the slack. By the end of the century, exports of jute and cotton yarn increasingly ensured a surplus.[20] The British evolved a monetary system to permit the remittance of surplus accumulated through trade, developing the system of council bills and concentrating power over the money supply in the hands of the Empire bank controlled by the Government of India, while this facility was removed from the private Presidency Banks.[21] This system permitted the British to subsidise its own balance of payments deficit with other industrialising countries, while providing new markets in shipping, insurance, foreign exchange and government debt in the City of London.[22] In periods of emergency, the flow of tribute could be supplemented by a levy on the Government of India, which contributed large sums to the British war effort, leading to fiscal deficits addressed through deflationary monetary and fiscal austerity and retrenchment in the 1920s.[23]

Brian Tomlinson, reviewing this period, writes that: 'The history of trade and manufacture in colonial India is dominated by counter-factual questions about the process of industrialisation.' Tomlinson is cautious about indulging in this approach to historical enquiry. Critics of British rule have been drawn to analyse the size of the "drain of wealth" – the surplus remitted to

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[19] Habib, 'Studying a Colonial Economy', p. 367.

[20] B.R.Tomlinson, *The Economy of Modern India, 1860-1970* (Cambridge, 1993), Chapter 3.

[21] Amiya Bagchi, *The Presidency Banks and the Indian Economy, 1876-1914* (Oxford, 1989).

[22] Cain and Hopkins, *British Imperialism: Innovation and Expansion,* Chapter 10.

[23] Bagchi, *Private Investment in India*, p. 44.

Britain. At 5 per cent of national income, the counter factual inference that is drawn is that this represented a substantial surplus that might have been invested in industrialisation in India itself.[24] Comparisons are drawn with the Japanese experience and the level of surplus required to initiate industrialisation in the absence of colonial control.[25]

If this line of reasoning is pursued, it seems logical to infer that the mechanisms of imperial rule outlined above cleared the way for investment by the British managing agents with access to cheap capital in industries such as jute manufactures while clearing the field of potential Indian competition. The legal system enforced a system of property rights favourable to British business while the managing agents were able to organise themselves into powerful associations through the chambers of commerce and gentlemen's clubs to articulate their needs and influence government policy, as their Indian rivals recognised:

> Given their much larger world connection and experience, these concerns [British managing agents] are able to compete on more than equal terms with the corresponding Indian concerns in the same field. They obtain all the fiscal and financial advantages open to Indians: in addition, they have the silent sympathy from the mystical bond of racial affinity with the rulers of the land, which procures them invisible, but not the less effective, advantage in their competition with their indigenous rivals. This device cannot be too strongly opposed.[26]

British fiscal policies created a cheap labour force from the distressed agrarian areas of Bihar, U.P. and Orissa. To the extent that an industrial policy existed, it created the infrastructure to facilitate the export of manufactures with few linkage effects to benefit the development of related industries in India. The narrowness of the market for domestic consumption under the pressure of regressive taxation exacerbated this tendency. Tariff and monetary policies facilitated the repatriation of profits – a more progressive taxation system might have

[24] See Naoroji, *Poverty and Un-British Rule* and Bagchi, *Private Investment in India.*

[25] Bagchi, *Private Investment in India*, p. 4; Morris has criticised this approach.

[26] The All-India Manufacturers' Organisation; Indian and International Economic Policies, Statement on the Agenda of the International Business Conference at Tye, New York, mid-November 1944, p. 41, quoted in Michael Kidron, *Foreign Investments in India* (Oxford, 1963), p. 67.

facilitated their reinvestment in the social overhead capital and development of technical training which hardly existed at the time in India.

This genus of Nationalist criticism, reprised above, of the contribution of British rule to the dynamism – or lack thereof – of the economy in general and the modern industrial sector in particular was continued by radical critics of the market, who wanted to see a greater role for planning in the post-Independence period. It has been contested, both at an empirical and conceptual level, by "revisionist" historians. Revisionist accounts that challenge the Nationalist case have tended to posit a sharp disarticulation between a 'modern' urban industrial sector dominated by foreign capital, and the 'traditional' agrarian sector. Thus, B.R.Tomlinson writes:

> [I]t might well emerge that the really important question to ask about the decline of expatriate enterprise is how strong it ever was in the first place. Certainly the expatriates dominated the 'organized' economy of eastern India in 1900, and in 1950 they did not, but the 'organized' economy-although attractive to scholars and relatively easy to analyse-may not have been the decisively important sector. Even with their close contacts with a would-be interventionist government since 1947 Indian entrepreneurs in the 'organized' sector have often found difficulty in forcing petty traders, producers and consumers to conform to their vision of economic progress. It may be that expatriate businessmen were never in reality more than fleas on the buttock of Mother India; they have been replaced by parasites that have been more persistent and elusive, but that have not yet become a great deal more firmly established.[27]

The metaphor of the flea of expatriate business feeding on the agrarian host suggests a parasitic but essentially passive relationship, with no fundamental consequences to the functioning of the host organism. It seems peculiarly inapt as a description of the urban jute industry's complex interaction with and transformation of the agrarian hinterland of Bengal, as outlined by Goswami, in terms of the commodification of markets for peasant production of jute, and the attendant transformation of relationships of land tenure, of agrarian factor

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[27] B.R. Tomlinson, 'Colonial Firms and the Decline of Colonialism in Eastern-India 1914-47', *Modern Asian Studies,* 15 (1981), p. 486.

markets and money lending.[28] Here, the collision of the modern and traditional sectors is constitutive of new, hybrid forms of economic relationships.

It is possible to discern in Tomlinson's work the traces of neo-populist concerns that industrialisation after Independence was privileged at the expense of progressive change in agriculture, as popularised in the work of Michael Lipton.[29] The dichotomy between the agrarian and industrial sectors is then projected backwards in time to emphasize the continuity of the economic problems facing an undeveloped country such as India before and after independence. The effect is to normalise British rule and to reduce its ramifications to a technical, managerial question.

At the opposite pole to neo-populism, modernisation theory has presented a positivist optimism about the scope of industrialisation's contribution to economic development, as represented by Morris D. Morris' article in the Cambridge Economic History. [30] However, Morris shares with Tomlinson the view of an unchanging, stagnant agrarian sector characterised by undeveloped market relationships constraining the dynamism of the economy.

Before proceeding to consider the existing historiography specifically relating to the jute industry, this review of some of the themes and debates raised by general accounts of the political economy of British colonialism in India, poses questions that inform the ensuing study of Thomas Duff & Co and the Calcutta jute industry. This study will consider how foreign investment was used as a vehicle to import capital and knowledge and to facilitate technology transfer. The colonial context and the economic policies of the Government of India had significant effects, both positive and negative, in facilitating the process of the creation of an

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[28] Omkar Goswami, Industry*, Trade, and Peasant Society: The Jute Economy of Eastern India, 1900-1947* (Oxford, 1991), pp. 19-40, 63-86.

[29] Michael Lipton, *Why poor people stay poor: urban bias in world development* (Cambridge, Massachusetts, 1977)

[30] Morris D. Morris, "The Growth of Large Scale Industry to 1947", in Dharma Kumar & Meghnad Desai (eds.), *The Cambridge Economic History of India. Vol.2, C.1757-C.1970* (Cambridge, 1983), pp. 553-677.

enclave of rapid industrialisation in a sea of agrarian backwardness. On the one hand, the imperialism of free trade left British businessmen a relatively free hand to invest, with minimal government interference in factor markets and markets for output prior to the inter-war period. On the other hand, British business experienced considerable difficulties negotiating the volatility that accompanied the unprecedented openness to market forces of the colonial Indian economy, particularly with respect to the decline in the value of the currency from the 1870s to the early 1890s. The advantages certainly outweighed the disadvantages. Market forces were extremely effective at securing supplies of cheap labour and raw material from the *mofussil*, while preferential access for European businessmen to foreign exchange markets monopolised by the European banks were a distinct advantage in securing them cheap sources of credit and working capital from which Indians were excluded.

This study does not focus on the processes by which colonial economic policy was formed or the relationship between business and the colonial state. These are only explicitly considered to an extent in a later chapter considering the role of Thomas Duff & Co in the strategy of the Indian Jute Mills Association. However, the study of the industry and the case study of Thomas Duff & Co illuminates how the colonial context and government policy affected a major industry and growth sector in the colonial economy during this period.

The Historiography of the Jute Industry.

The historiography of jute manufacturing in Calcutta can be divided into three broad categories. The first category comprises general studies of Indian economic history which sets the industry in the broader context of the development of the Indian economy and evaluate the extent to which British rule played a progressive or retarding role in this development. The second category comprises monographs about the jute industry which tend to focus on labour history. The third category comprises business historians seeking to understand the institutional nature of the international networks of firms central to Britain's imperial economy - in which Indian jute was one node amongst many.

Economic surveys.

Morris' survey of industrialisation in the *Cambridge Economic History* presents an archetypal view of colonial capitalists as a source of dynamism in a backward economy. A consequence of Morris' view of a colonial economy constrained by the dominance of a stagnant agrarian sector is that he posits a scarcity of capital in the traditional sector which had to be made good by foreign investment.[31] In his account, Morris contrasts British domination of the jute industry in Bengal, with Indian domination of the cotton industry of western India. Collusion in the jute market by British managing agents is contrasted with atomistic competition between Indian entrepreneurs in cotton. He sees the overcapacity in jute resulting from the IJMA agreements leading to lower profit margins relative to cotton, speculating that the non-entry of Indian firms until the 1920s can therefore be explained by the existence of better opportunities in other sectors, rather than any racial hostility on the part of the British incumbents. He further speculates that British shareholders viewed jute mill shares as a secure investment and that, partly, this was premised on the employment of European supervisors despite the availability of cheaper Indian substitutes.[32] Whatever the empirical validity of these observations about the relative economic performance of jute manufacturers, Morris' view of the 'colour-blind' nature of the industry is contested by Misra, who believes that the managing agents' business strategy was governed by an exclusivist racial superiority. She argues that this prevented them from diversifying into more dynamic sectors and from forming alliances with Indian capital to preserve their position in sectors such as jute where they were already established in ways

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[31] Morris, "The Growth of Large Scale Industry to 1947", p. 555.
[32] Morris, "The Growth of Large Scale Industry to 1947", p. 572.

that were detrimental to their interests in the long term.[33] Misra's argument exemplifies a species of argument which is concerned to emphasize the heuristic importance of 'culture' in explaining the actions of different interest groups in British India. This approach is counterposed to structuralist explanations which, in failing to address the culture of the imperial encounter, are depicted as reductionist and deterministic. It is necessary to consider the institutional structure of the jute mill companies in more detail, specifically the content of the managing agency company form, to evaluate the strengths of these different approaches. Before examining the characteristics of the management of the industry, the nature of the labour employed in the industry is described. The historiography of this aspect of the industry has also been marked by divergent views about the proper weight of structural and cultural factors in explaining the evolution of industrial relations and employment practices in the jute mills.

Amiya Bagchi's *Private Investment in India, 1900-39* stands out as the authoritative restatement of the nationalist, drain-of-wealth, position, counterposed to Morris. This work is informed by an analytical concern to understand colonial India's industrial stagnation in the light of the developmental capacities demonstrated by the state in uncolonised Japan.[34] Bagchi marshals a mass of empirical evidence to demonstrate the lack of linkage effects in high growth sectors such as jute and cotton manufacturing – with a broader array of industries required to achieve the critical mass for industrial takeoff – such as steel and machine tools.[35] He rejects neo-classical supply-side explanations which rely on the myth of a scarcity of Indian capital and entrepreneurship to undertake profitable investment, pointing instead to the salience of demand-side factors such as the Government of India's laissez-faire trade policies and preferential treatment for manufactures imported from Britain, and the impoverishing

[33] Maria Misra, *Business, Race, and Politics in British India, C.1850-1960* (Oxford, 1999), pp.210-14.

[34] Bagchi, *Private Investment in India, 1900-1939* (London, 1972).

[35] Bagchi, Chs. 9-10.

effect of colonial taxation on Indian consumer demand.[36] Bagchi's case study of the jute industry emphasizes the enclave nature of the industry – in its predominantly European ownership and export orientation – that is consistent with his focus on the failures of colonial industrial policy to foster virtuous linkage effects.[37] Bagchi's analysis of the industry's development was limited by the empirical evidence available to measure the quantitative growth of the industry, which is examined in Chapter 1.

Bagchi's optimistic account of the scope for an interventionist industrial policy has fallen out of fashion since the 1970s. The revisionism of the Cambridge School of the historiography of colonial India has tended to eschew systemic analysis, preferring a focus on more detailed regional and sectoral studies.[38] General surveys tend to focus on the continuities in the incapacity of the colonial and post-colonial states to address intractable problems of agrarian backwardness swamping the potential for industrial transformation.[39]

Monographs about the jute industry

Perhaps the best known strand of scholarship about the jute industry comes from the field of labour history. The publication in 1989 of Dipesh Chakrabarty's *Rethinking Working Class History* has inspired a series of monographs by Indian historians examining different aspects of the history of labour in the jute industry. Chakrabarty utilised the framework of the Indian Subaltern Studies school of history to attempt to 'liberate' jute labour from the perceived condescension of a Marxist-influenced, Eurocentric, teleological reductionism in the existing literature on Indian labour history.[40] While the focus of the present work is avowedly about capital not labour, Chakrabarty's work – and subsequent work inspired by it - contains a wealth

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[36] Bagchi, pp. 19-25, 157-218.

[37] Bagchi, Ch. 8.

[38] See, for instance, Ian J Kerr, *Building the Railways of the Raj, 1850-1900* (Oxford, 1998).

[39] B. R. Tomlinson, *The Economy of Modern India, 1860-1970* (Cambridge, 1993).

[40] Dipesh Chakrabarty, *Rethinking Working-Class History: Bengal, 1890-1940*. (Princeton, 1989).

of sources and telling observations about the jute industry. His central thesis challenges the depiction of the industry as an island of modernization in a sea of agrarian backwardness and teleological and unilinear causal narratives which telescope processes of development in the colonial/ post-colonial context. Chakrabarty presents evidence of the persistence of a communal, “pre-capitalist” identity and culture amongst the jute workers to make this case.[41] He applies this logic to analyse how the colonial context of the industry’s development shaped the operation of “managerial authority” in the jute mills. He describes managers as in “Ma-Baap” – which translates as “parental” – relationship to their workers, which is compared to a form of “paternal despotism”.[42] Antony Cox’s work seeks to transform the concept by extending it to apply to the mainly female workforce in Dundee through the operation of an “imperial nexus” of relationships governing jute manufacturing labour in the periphery and the metropole.[43] In a different way, both Gordon Stewart and Maria Misra have extended Charkrabarty’s concept – at least implicitly – beyond the walls of the factory. Stewart discusses the transformation of Scottish businessmen into “merchant princes” in Calcutta.[44] Misra contends that the relationships of European jute capitalists with Indian counterparts in the jute value chain were characterized by a racialised cultural superiority that ran counter to rational economic decisions.[45]

A series of other works have focused upon the economic crisis of the interwar period and its impact on the jute industry. Samita Sen has studied how female labour bore the brunt of

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[41] Chakrabarty, *Rethinking Working-Class History,* Chs. 3 and 5.

[42] Dipesh Chakrabarty, ‘On Deifying and Defying Authority: Managers and Workers in the Jute Mills of Bengal circa1890-1940’, *Past and Present*, 100 (Aug., 1983), pp. 129-132. The reference to “paternal despotism” cites Anon., "The Calcutta Jute Mills", in *Dundee Year Book, 1894* (Dundee, 1895), p. 95.

[43] Antony Cox, *Empire, Industry and Class; the Imperial Nexus of Jute, 1840-1940* (London, 2013), pp. 3-7; see also Stewart, *Jute and Empire*, pp.47-48.

[44] Stewart, Jute and Empire, p. 147-50. The Dundee Directory 1874-75 p.14 refers to the Dundee’s satellite town Broughty Ferry containing “numerous beautiful villas, the homes of our merchant princes”. See also “Kipling offers a suggestion to ‘merchant princes’ of Dundee”, *Dundee Courier*, 13 Oct 1923, p. 5.

[45] Maria Misra, *Business, Race, and Politics*, pp. 210-11.

retrenchment by the employers.[46] Das Gupta, Basu and Cox have contested aspects of Chakrabarty's thesis about the communal nature of labour relations, with particular reference to the general strikes of 1929 and 1937. [47] This debate has informed the work of British historians examining the culture of ex-patriot British capitalists who ran the industry.[48]

Business history and institutional theories

Business historians have sought to understand the institutional nature of the international networks of firms central to Britain's imperial economy - in which Indian jute was one node amongst many. These networks differed in important respects from the paradigm of the modern multi-division, multinational corporation exporting a competitive advantage developed in the domestic market, as laid down by the work of American business historians, such as Chandler.[49] Chapman identifies path dependency and declining returns to mercantile capital in the eighteenth and nineteenth centuries as factors driving the entry of colonial merchants into fixed investments in manufacturing.[50] Wilkins identified 'free standing companies' as an important vehicle for channelling investment funds to the colonies which served as a corrective to the prevailing view that portfolio investment was the dominant vehicle for foreign direct investment.[51] The term 'free standing' captures the way in which these companies were formed for the specific purpose of undertaking a foreign investment.

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[46] Samita Sen, *Women and Labour in Late Colonial India: The Bengal Jute Industry* (Cambridge, 1999).

[47] Ranajit Das Gupta, *Labour and Working Class in Eastern India: Studies in colonial history*, (Calcutta, 1994); Subho Basu, *Does Class Matter?: Colonial Capital and Workers' Resistance in Bengal, 1890-1937* (Oxford, 2004). Cox, *Empire, Industry and Class.*

[48] Stewart, *Jute and Empire*; Maria Misra, *Business, Race, and Politics*.

[49] Alfred D. Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, Mass ; London, 1977); ibid., *Scale and Scope : The Dynamics of Industrial Capitalism* (Cambridge, Mass., 1990).

[50] Stanley D. Chapman, *Merchant Enterprise in Britain: From the Industrial Revolution to World War I* (Cambridge, 1992).

[51] Mira Wilkins, "The Free-Standing Company, 1870-1914: An Important Type of Foreign Direct Investment", *The Economic History Review*, Vol. 41, No. 2, (May, 1988), pp. 259-282; Mira Wilkins and Harm Schroter, *The Free-Standing Company in the World Economy 1830-1996* (Oxford, 1998).

More recently Jones focused upon the performance of British merchants which evolved into multinationals with diversified investments in the periphery.[52] Casson argued that these British firms did internalise a competitive advantage. In his view, most of the free-standing companies identified by Wilkins were ‘property-related’ – plantations, mining, utilities – and reverted to portfolio investment once the non-generic specificity of the managerial skills required to be internalised in the initial investment phase of these projects passed. However, he argued that, in the case of manufacturing investments, their operations continued to require non-generic managerial skills where the locus of strategic control from overseas remained salient.[53] The debate between business historians over the institutional forms taken by foreign investment – variously categorised in the form of the ‘investment group’, the ‘free standing company’, the merchant turned multinational, and the ‘multinational managing agent’ or ‘ex-patriot multinational’[54] – points to the need for further research to understand and conceptualise the substance of the institutional relationships involved in British foreign investment in the period 1870-1914, of which the jute industry in Calcutta is a specific case.

Some historians, such as Misra, believe that a British business ‘culture’ of ‘gentlemanly capitalism’ constituted a barrier to Chandlerian ‘modernisation’, although many business historians seek to avoid such normative categories.[55] This historiography will inform this case study of Thomas Duff; in turn, such a case study, it is hoped, can serve to illuminate in an original way the themes and test some of the hypotheses in this literature.

Among these records, the Thomas Duff Archive at Dundee University represents one of the most detailed sets of company records from the 1870s through to the 1960s, comprising

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[52] Geoffrey Jones, *Merchants to Multinationals: British Trading Companies in the Nineteenth and Twentieth Centuries* (Oxford, 2000).

[53] Mark Casson, 'Institutional diversity in overseas enterprise; explaining the free-standing company', *Business History*, 36.4, pp. 95–108, 1994.

[54] The categorisations adopted respectively by Chapman, Wilkins, Jones and Casson.

[55] Misra, *Business, Race, and Politics* pp.210-14. For a critical account, see, for instance, J. Tomlinson, *The Politics of Decline: Understanding Post-War Britain* (Harlow, 2001).

company accounts, minutes of board meetings and correspondence between the head office in Dundee and managers in Calcutta and have been extensively referred to.[56] This study will seek to analyse the history of Thomas Duff and Company in more detail.

The Managing Agency System.

Jute mills here were set up by the managing agencies, run and controlled by British capitalists resident in India, who dominated the small formal industrial sector in Bengal. A managing agent was a firm delegated by another firm's principals with responsibility for the day-to-day operational management in return for a fee, often a commission on the managed firm's sales or profits.[57] Managing agents provided a service based upon their informational advantages in terms of knowledge of capital markets, export markets and access to finance. They often acted as promoters and under writers of share issues in the managed firms.

These managing agencies had nominally originated to circumvent the ban on employees of the East India Company trading on their own account. Run by merchants independent of the Company, they served as a conduit for the capital of Company employees or of British residents seeking investment opportunities in the colonial economy but lacking the knowledge to monitor such projects.[58] The agents were involved in the export of opium to China which secured valuable specie for London as part of the larger circuit of the triangular trade. In the 1830s, they mobilised large sums for the speculative boom in indigo production, used for the making of dyes prior to the second industrial revolution, but many of the agencies were bankrupted after having made large advances to the indigo plantations which could not be

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[56] University of Dundee Archive, (henceforth UDA), MS 86.

[57] Blair B. Kling, '*The* Origin of the Managing Agency System in India', *Journal of Asian Studies*, 26:1 (1966), 37-47.

[58] Chapman, *Merchant Enterprise*. B. R. Tomlinson, 'From Campsie to Kedgeree: Scottish Enterprise, Asian Trade and the Company Raj', *Modern Asian Studies*, 36 (2002), pp. 769-791.

repaid when the price of indigo fell.[59] A second generation of managing agents rose to prominence in the 1840s, most notably the multiracial partnership of Carr-Tagore with interests in river steamers and banking which marked the last serious large scale business venture by a Bengali entrepreneur in an increasingly racialised, post-Mutiny, Raj.[60] These ventures again floundered in the face of the crisis of the late 1840s and the small size of the domestic market.

Chapman has argued that the next generation of managing agencies to emerge in the 1850s to set up the Calcutta jute mills should be clearly distinguished from the earlier examples which went by the same nomenclature and criticizes Kling for obscuring this difference; Chapman prefers to bracket them under the broader category of "investment groups".[61] This is considered in more detail later in this chapter. At any rate, the later managing agencies were better integrated into international circuits of mercantile capital and proved to be a much more stable and enduring institution. They came to dominate the economy of Eastern India and its Bengali hinterland, with diversified interests initially in trading but increasingly came to use their local expertise and access to capital markets in London to develop interests in manufacturing, with large investments in jute, coal, tea, river, coastal and intercontinental shipping, and played an important role in developing local capital markets and banking, setting up the Calcutta stock exchange, the Presidency Banks and coordinating their activities through the Bengal Chamber of Commerce, with headquarters on Clive Street.[62]

An important feature of the historical schema outlined by Chapman is that he views the adoption by the agency houses of the functions of managing agents as an important aspect of their evolution into consolidated "investment groups". Another aspect conditioning this

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[59] Chapman, *Merchant Enterprise*, p. 111

[60] Bagchi, *Private Investment*, p. 197.

[61] Chapman, *Merchant Enterprise*, chapter 8.

[62] Chapman, *Merchant Enterprise*.

evolution was the impact of the communications revolution on the relative profitability of mercantile and productive investments in colonial India. This comprised a cluster of innovations that radically restructured the conditions of conducting business in India through the compression of time and space that marked "the first globalization". This led to the integration of Indian markets through the construction of the railway network from the 1850s, the introduction of steam shipping services utilizing the Suez canal for passengers, mail services and commodity exports to Europe, telegraphic transmission of business correspondence, market information and bank transfers.[63] These innovation gave added impetus to the scope of export demand for the primary and processed products which the managing agents were sinking increasing quantities of fixed capital into extracting and manufacturing. It also led to a long term secular decline in freight rates charged by shipping companies. In the case of the destination of jute manufactures, this eroded the competitive edge enjoyed by Dundee because of its relative proximity to its most important export market, the Eastern seaboard of the United States.[64]

The communications revolution also had more direct implications for the organization of the agency houses. The integration of markets for agricultural commodities on a global scale – and the instantaneous transmission of local prices and their transformation into a world market price – reduced opportunities for arbitrage by mercantile capital. Only firms operating on a larger scale than hitherto seen – with the requisite creditworthiness in the eyes of the accepting houses at the apex of the banking system in the City of London - could continue to specialize purely in commodity brokerage. Rallis, the Greek trading company, which had transferred their operations from the Black Sea to Calcutta, stands out in this respect, with the unrivalled scale and international scope of their position in raw jute dealing. This process had organizational implications for the managing agents in that it accentuated the need to expand

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[63] Chapman, *Merchant Enterprise*, chapter 4.

[64] E. A. V. Angier, *Fifty Years' Freights, 1869-1919* (London, 1920).

into productive outlets while encouraging a process of consolidation in order to raise the requisite finance for their activities. This led to the increasing integration of corresponding firms in different locations, and dovetailed with the increasing ease with which business operations could now be conducted by senior partners who had returned to London or elsewhere in the UK to prepare for their retirement.[65]

The Calcutta jute industry and Thomas Duff & Co in outline.

Before proceeding to a more detailed survey, a brief description of the history of the jute industry and the role played by Thomas Duff and Company is necessary to provide some context. The origins of the jute industry in Calcutta should be recognised as quite separate from the Dundee industry.[66]Jute manufacturing originally developed around Dundee, in Scotland, when raw jute imported from Bengal was found to be a cheap substitute input for flax imported from Russia in the traditional linen industry of the region, once treatment with whale oil succeeded in giving the raw jute the necessary physical properties for the manufacture of yarn. The initial impetus for the development of the industry in Scotland derived from the disruption of flax supplies during the Crimean War. Jute manufactures of hessians and sacking were an intermediate product and came to a position of predominance as the cheapest wrapper for a rapidly increasing world trade in raw materials in the second half of the nineteenth century relative to existing substitutes such as flax or cotton. The growth of this labour intensive industry attracted large numbers of poor Irish and Highland peasants recently expelled from the countryside, who ensured a cheap supply of labour with a strong female component. The profits of the jute mills in Dundee created a prosperous local bourgeoisie, which reinvested a large portion of their profits in growth sectors of the American economy

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[65] Chapman, *Merchant Enterprise*, pp.118-124.
[66] Shyam Rungta, *The Rise of Business Corporations in India*, 1851-1900, (Cambridge, 1970).

promising a swift return, such as railways. Investment in manufacturing in India was perceived as too risky by comparison.[67]

The growth of the industry indicates that the Calcutta mills were able both to take advantage of the development of new markets through the expansion of world trade in raw materials requiring a wrapper but also to take markets away from Dundee. Stewart has analysed how this led the Dundee mills to adopt the strategy of seeking new markets in more technologically advanced markets such as carpet backing and intermediate products for linoleum flooring and furniture because they could not compete with the Calcutta mills on the basis of price.[68] The Calcutta mills enjoyed a clear competitive advantage. They enjoyed access to capital markets on the basis of the managing agents' good reputation. Machinery could be purchased from the same textile machinery engineers that serviced Dundee or second hand from the Dundee mills themselves. Labour was relatively cheap, with a plentiful supply of workers moving out of the depressed agriculture of the poor and populous neighbouring states of Bihar and United Provinces with some appropriate skill – many Bihari Muslims who entered the weaving sections of the mills came from families of handloom weavers.[69] The land purchased for the erection of the mills occupied a sixty-five mile stretch of the Hooghly river to the North and South of Calcutta, with excellent railway and river steamboat infrastructure which ensured a cheap supply of raw jute from North and East Bengal, and a flexible supply of workers who could be expelled back to their home districts when there was a fall in demand.[70] Proximity to supplies of raw jute ensured raw material could be purchased much more cheaply than the price obtaining for competitors in Dundee. The mills enjoyed access to the well developed

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[67] B. P. Lenman, E. E. Gauldie and C. M. Lythe, *Dundee and Its Textile Industry, 1850-1914*, (Dundee, 1969).

[68] Stewart, *Jute and Empire*.

[69] Subho Basu, Does *Class Matter?: Colonial Capital and Workers' Resistance in Bengal, 1890-1937* (New Delhi; Oxford, 2004).

[70] A. de Haan, *Unsettled Settlers: Migrant Workers and Industrial Capitalism in Calcutta* (Hilversum, 1994); Sen, *Women and Labour in Late Colonial India*.

shipping networks of the Empire for the sale of their manufactures.[71] The existence of low barriers to entry to the industry entailed that the mills would have to coordinate production in order to take advantage of their competitive advantage and remain profitable. This would lead to the formation of the Indian Jute Mills Association, (IJMA) in 1884.[72]

Thomas Duff and Company played an important role in the setting up the IJMA. The IJMA was very influential in the Bengal Chamber of Commerce, the voice of British ex-patriot capital in Calcutta, and would later succeed in successfully lobbying for a separate electoral constituency for British business with the coming of provincial autonomy in the 1930s.[73] Seventeen of the fifty four chairmen of the IJMA up to 1940 were directors of Thomas Duff, a position monopolised by the "big four" jute manufacturers – Duff, Yules, Bird and Jardine-Skinner.[74] From its foundation, the IJMA would grapple with the problem of how to coordinate the actions of its membership in an industry with low barriers to entry and an intermediate product whose purchasers enjoyed considerable market power. According to Goswami:

> By 1913, the United States alone accounted for 40 per cent of the total value of Indian gunny exports. This was not an unmixed blessing, for Calcutta soon became thoroughly dependent on the demand of a single national market. Moreover, the U.S. purchases were controlled by a handful of importers in New York and Savannah – of whom Bemis Brothers was the largest – and these firms soon had the strength to wield considerable pressure on the Calcutta mills.[75]

Thus, oligopolistic strategies utilised by producers in consumer goods industries, such as branding and marketing to create barriers to entry, were not available to the IJMA. Instead,

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[71] Goswami, Industry*, Trade, and Peasant Society*.

[72] *Times of India*, p5, 7 Dec 1885. The Association was originally named the Indian Jute Manufacturers Association but changed its name in the 1890s.

[73] Basu, *Does Class Matter?*, Chapter 7.

[74] Stewart, *Jute and Empire*, p. 19.

[75] Goswami, *Industry, Trade and Peasant Society*, p. 57.

the IJMA would resort to a series of working-time agreements to limit production at times of low demand. The success or failure of this strategy is considered in more detail below.

Wartime.

A new phase of expansion of Calcutta jute manufactures was heralded by the First World War. The spare capacity deriving from the IJMA's short-time working agreements allowed the mills to increase output rapidly to meet the huge demand for sandbags from the British state. At the same time, the wartime disruption to shipping and the loss of German and Austrian markets, depressed the price of raw jute. By 1918, nearly all the mills enjoyed profits of more than 100%, 3 mills of more than 250%. The mills paid out dividends at up to 330% while accumulating huge reserves. Seven new mill companies were floated during the war but could not start production because the necessary shipments of machinery could not be sent.[76] Many new mills were floated in the years following the end of the war.

The immediate post-war period marked a significant shift in the political context in which Indian industry functioned. State intervention in the British economy continued in peacetime and was reflected in debates in India about the role of the state as a promoter of domestic industry to build on the achievements of the wartime economic boom.[77] The Indian Retrenchment Committee – to which Sir Alexander Murray, a former director of Thomas Duff, was appointed in 1922 – attempted to return the Raj to its pre-war commitment to free markets through swingeing cuts in expenditure by the Government of India.[78] This policy, together with the renewed commitment to a deflationary monetary policy embodied by the revaluation of the rupee against sterling - was fiercely criticised by a resurgent Nationalist

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[76] Goswami, *Industry, Trade and Peasant Society*, pp.92-3.

[77] See C. J. Dewey, 'The Government of India's "New Industrial Policy", 1900-1925: Formation and Failure", chapter in K. N. Chaudhuri and C. Dewey, *Economy and Society: Essays in Indian Economic and Social History* (Oxford, 1979).

[78] *The Times*, June 10, 1922, p. 7.

movement.[79] The low wages and precariousness of employment in Indian industry were drawn into the ambit of government policy through discussion of India's proposed membership of the International Labour Organisation and official disquiet at the growth of Communist influence in the trade unions.[80]

Outline of the Thesis.

Chapter 1 presents a quantitative study of the development of the jute industry in Calcutta from 1870 to 1921. It presents an original empirical account of industry performance integrating firm-level and industry-level data. It creates a framework that allows the often impressionistic judgments in the existing literature to be assessed. The quantitive study of the industry confirms that there was limited technical change in the industry over time and limited scope to innovate and to capture internal economies of scale. High profits relative to other industries led to impressive rates of investment and growth. This growth was extensive, driven by the application of more factors of production, rather than a qualitative improvement in productivity or product- and process- innovation. An analysis of the cost structure of the industry shows the dominance of raw jute as the crucial input dominating industry performance. Raw jute prices experienced a long-term secular trend to increase in real terms by 50% during the period that put pressure on profit margins. Labour was very cheap and plentiful in the long-term and remained cheap. This cost structure entailed a strategic imperative to buy jute cheaply at the right point in the seasonal cycle, leading to rising jute stocks held by the industry over time, which necessitated access to sources of credit to finance working capital.

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[79] D. Rothermund, *An Economic History of India: From Pre-Colonial Times to 1991* (London, 1993), p. 76; Bagchi, *Private Investment in India*.

[80] On the ILO, see Sen, *Women and Labour*, Chapter 4. Communist influence is discussed in Basu, *Does Class Matter?*, Chapter 7.

Relatively high profitability permitted a dividend performance that attracted investors to finance a high rate of capital accumulation, while permitting the managing agents of the jute mill companies to extract very significant rents. It is shown that the period from 1870-1921 was punctuated by three distinctive sub-periods. There was relative volatility in the industry's performance in terms of profitability and returns to investors in the 1870s and 1880s punctuated by the crises of 1879-80 and 1884-86. This was followed by a long period of relative stability and accelerating growth in the 1890s and 1900s, accompanied by stagnating profits and declining dividends and a return to crisis in 1905-06, 1908-12 and 1914. There was an interlude in the war years when the industry was extremely profitable. If the war years are excluded, there was a long term trend for profits to decline, mirrored by a narrowing of the equity base on which shareholders could earn high dividends. The evidence presented is consistent with the hypothesis that the formation of the Indian Jute Mills Association in the 1880s and the use of short-time working to limit output in periods of depressed demand was successful at managing competitive pressures in the industry, while storing up the seeds of crisis in the inter-war period.

Having determined the pattern of the industry's development, Chapter 2 develops a quantitative assessment of the variations in the performance of different firms within the industry. As there was no distinctive trend for new mill companies to perform better than older companies over time – and for ease of exposition – the managing agent is taken as the basic unit of analysis. It is demonstrated that there were significant variations in performance of the mill companies under different managing agents over time, permitting some managing agents to expand rapidly and increase market share at the expense of others whose market share declined or who were forced out of the industry. While the technical barriers to entry in the industry were low, it is demonstrated that there was limited entry by new managing agents during the period, suggesting significant barriers to entry in terms of access to the information and other forms of competitive advantage internalized by those managing agents which survived. A series of quantitative indicators are considered which show that the degree of variation in managing agents narrowed in the long run up to the war. This suggests a convergence in firm performance under competitive pressures and the diffusion of good practice through the auspices of the IJMA. The managing agents who survived the period of volatility experienced in the 1880s and 1890s converged on a range of performance which allowed most to remain profitable, while the variation in performance was sufficient to permit some managing agents to expand market share significantly and to experience rapid growth. It is also shown that there were significant differences in the performance of managing agents based in Calcutta who managed Rupee companies, and those based in the UK who managed Sterling companies. The Rupee companies were more susceptible to competitive pressures than the Sterling companies in general because of their relationship to the discipline of capital markets and tended to perform better over time, while the excessive rents charged by some of the managing agents of Sterling mills had a deleterious effect on firm performance. It is shown that Thomas Duff & Co, one of the managing agents of Sterling mill companies, was an exception. Along with three other managing agents in Calcutta, it succeeded in combining high profitability and returns to investors with rapid expansion of it productive capacity to increase its market share.

The quantitative evidence of industry- and firm-level performance poses questions about the nature of the competitive advantage that firms internalized. The following chapters assess some of the questions posed through a case study of Thomas Duff & Co, a managing agency based in Dundee which controlled three mill companies in Calcutta – the Samnuggur, Titaghur and Victoria mill companies. Thomas Duff & Co were atypical of the managing agents operating in the Calcutta jute industry in some ways. They were the only managing agents with a headquarters in Dundee, the birthplace of the jute industry and they remained specialized in jute production. Most of the other managing agents were based in Calcutta and had followed the path described by Chapman in diversifying from mercantile activities into a range of manufacturing activities requiring fixed investments. Thomas Duff & Co was a private limited company whereas the other managing agents operated as partnerships. Nevertheless, it is precisely the atypical nature of Thomas Duff & Co as an incorporated jute specialist that permits it to serve as a case study allowing inferences to be drawn about the functioning of the managing agency system, while not neglecting its specificity. Its relatively transparent accounts and its specialism in jute permit an assessment of the scale of rents derived from the jute industry by the managing agency system.

Chapter 3 presents an overview of the historically specific and path-dependent evolution of Thomas Duff & Co into a "multinational managing agency".[81] Unlike most Calcutta managing agents, the principal actors in Thomas Duff & Co were originally the directors of a "free-standing company" manufacturing jute in Calcutta, the Samnuggur Co. They had to learn the skills of a Calcutta managing agent before internalizing them after ten years of the Samnuggur's existence. However, the other sources of competitive advantage are considered which permitted the actors who would later become Thomas Duff & Co to enter the Calcutta industry. The use of the public limited company form allowed the directors of the Samnuggur Co to pool location-specific knowledge from both Dundee and Calcutta and to internalize their collective competitive advantage, while solving principal-agent problems to establish an effective multinational management structure. This was not possible for more established Dundee firms under family control. The plc form did not dissolve the importance of family networks in the operation of Thomas Duff & Co and its managed firms. Rather, the resources of various family networks – in the form of knowledge and equity - were pooled, while the hereditary aspect was attenuated in relation to the appointment of firm managers to enable the efficient handling of the firm's affairs in the interests of the original family networks. Particular attention is given to the way in which the directors of Thomas Duff & Co utilized the

[81] Casson, 'Institutional diversity in overseas enterprise; explaining the free-standing company', pp. 95–108.

technologies associated with the 'first globalisation' – improved international shipping and more rapid communication through telegraph and post – to surmount the difficulties of managing a multinational engaged in manufacturing. It is also shown how the firm succeeded in creating a virtuous circle of profitability of the managed firms that permitted the maintenance of high returns to ordinary shareholders, rapid growth of productive capacity while permitting the extraction of very significant rents by the managing agents that allowed for a rapid accumulation of wealth which was a distant memory for most of their peers amongst Dundee's jute capitalists.

Chapter 4 proceeds to consider some more specific aspects of the Thomas Duff & Co's history. Protecting and renewing the competitive advantage internalized in the firm required the judicious handling of managers and the creation of a career path to incentivize and reward Calcutta managers by giving them access to the stream of rents captured by the managing agency's directors. This had to be balanced against the imperative to restrict access sufficiently in order not to dilute the stream of rents paid to individual directors. Several episodes are considered of how internal dissension within the directorship over access to managing agency rents was contained. These episodes threatened to call the whole structure into question through unwanted attention in the eyes of the media and the law courts – and by extension – the ordinary 'outsider' shareholders.

The following section demonstrates how Thomas Duff & Co addressed the problem of rising jute prices by an informal process of backwards integration which allowed it to capture the directors of the raw jute trading firm of R Sim & Co, Robert Sim and John Smith, while limiting the risks associated with fluctuating prices. Rather than formally integrate backwards, Robert Sim and John Smith brought valuable information on to the board of Thomas Duff & Co while market power combined with family networks to ensure privileged access to the raw material.

The chapter concludes by delineating the way in which Thomas Duff & Co was able to bring its distinctive competitive advantage as a jute specialist to bear in playing a disproportionately prominent role in the affairs of the Indian Jute Mills Association. While the other participants were highly diversified with conflicts of interest as suppliers of inputs to the industry and in marketing the industry's output, Thomas Duff & Co played a significant role in advocating a strategy of managed competition through short-time agreements and periodic restrictions on investment in new capacity that enabled the industry to consolidate after the volatility experienced during the 1870s and 1880s. Although this entailed short-term costs to the firm in terms of sacrificing its competitive lead in certain destination markets, it served its long-term strategy of managing the effects of competition as a relatively small firm without the financial resources to weather crisis of some of its more diversified competitors.

Chapter 5 considers the way in which Thomas Duff & Co engaged in a process of learning in relatively competitive Calcutta capital markets and pioneered the controlled expansion of its equity base to take on a more popular character – encompassing professionals, petit bourgeois and their own skilled employees. This permitted the managing agents to raise investment funds on a sufficient scale to finance the rapid expansion of the jute companies they managed, while retaining sufficient stakes themselves to maintain control and maintain access to lucrative managing agency rents.

Sources.

The thesis draws on a range of archival sources accessed in UK collections, including individual company archives such as those of Thomas Duff & Co at the University of Dundee and of James Finlay & Co at the University of Glasgow, as well as India Office records at the British Library, and extensive research in both British and Indian newspaper archives. These sources were supplemented by fieldwork in Calcutta, which permitted me to consult the annual reports of the Indian Jute Mills Association at the Bengal Chamber of Commerce, and *Capital*, the weekly financial newspaper of European business, at the National Library, Calcutta, which I have used extensively.

Chapters 1 and 2 condensed a mass of quantitative data in order to measure the performance of the industry over time and to draw comparisons between the performance of the mill companies managed by Thomas Duff & Co and that of other firms. Some firm-level data are aggregated to estimate industry measures in Chapter 1 and the same data are used to study the relative performance of managing agents in the industry in Chapter 2.

As all the firms in the industry – with the exception of Birkmyre Brothers' Hastings mill - were public companies with a stock exchange listing, their annual or half-yearly results were published regularly in commercial newspapers, detailing firms' balance sheets and profit and loss accounts. I have collated reports published in the *Dundee Advertiser* and in the weekly Calcutta commercial newspaper, *Capital*, published from 1889 onwards. *Capital* also published weekly share prices and share transactions and half yearly tables for variables such as raw jute held in stock by the jute mill companies. I have supplemented this data with the data from the *Investor's India Year Book* annual series published from 1911, which provides the data for the Calcutta-listed jute mill companies' profit and loss accounts from 1903 and balance sheets from 1912.

Because all of the jute mill companies in Calcutta except Birkmyre's Hasings mill were public companies with published accounts – and there were never more than a few hundred looms operating elsewhere in India during the period of study – it has been possible to use the firm-level data to construct aggregated estimates of the industry's performance, estimating a small number of missing values based on the share of an individual firm in total industry loom capacity.

Methodology.

Chapters 1-2 present a quantitative study of the evolution of the Calcutta jute industry, taking the industry as a whole then examining variation between firms. This represents original work in its own right based on the analysis of industry-level and firm-level data together to present a battery of descriptive statistics. Further work on the data series is required in order to be able to test the statistical relationships between the variables presented and has not been attempted in this study, although a basic measure of the correlation between raw material prices and output prices is presented.

Drawing on the approaches of business historians and institutionalist economists cited above, Chapters 3-5 focus on the case study of an individual firm based on the firm's internal records and accounts, particularly the minutes of the directors, to attempt to illuminate and make intelligible some of the quantitative economic trends in industry and firm performance identified in Chapters 1-2. Specifically, it will be seen that an analysis that incorporates the networking and information aspects of business relationships can contribute a more developed understanding of the strategies of the Calcutta managing agents who invested in the jute industry. Forms of networking – through family ties or personal acquaintance in prior transacting giving rise to trust – provide a crucial dimension for understanding firm strategy and choices about contracting. This is particularly the case in the specific historical context of this study, which analyses British businesses in the process of transition from family enterprises to public limited companies, who were investing in a colonial context which required effective contracting to protect and reproduce location-specific knowledge and competitive advantage within the firm. The contribution of networked relationships to the success of Thomas Duff & Co can be observed in their relationships in export markets, in controlling risk in relationships with their raw materials suppliers, and in controlling market conditions through collusion with other Calcutta manufacturers, as well as in the creation of a loyal base of insider shareholders to finance the firm's expansion while retaining control.

Chapters 3-5 also demonstrate the particular salience of an analytical focus on information flows in a multinational manufacturing enterprise such as Thomas Duff & Co, which took the form of a “managing agency”. The spatial and temporal dimensions of the efficient management of information flows across national boundaries in the age of Suez and the telegraph are examined. It is shown that Thomas Duff & Co was successful at creating an institutional structure to generate, protect and reproduce knowledge of different types of information necessary to sustain profitable performance and growth – technical information of production processes and commercial information to control input costs and market output. The institutional form of the managing agency draws the reader’s attention to the existence of information asymmetries between firm principals and agents, explaining the ability of agents to generate rents. Rent-seeking is referred to, not in a normative sense, but contributes to an understanding of the motivation of the directors of Thomas Duff & Co to shape firm strategy in a fashion that they profited from while ensuring good returns to their principals, the shareholders. The discussion of principal-agent relationships is found to be useful as a descriptive tool firmly rooted in an analysis of historical context and the substantive power relationships and information advantages of the directors of the managing agency, which clearly departs from the methodological individualism of classical principal-agent theory. Agency in the formation of firm strategy and in the design of efficient incentives is located in this analysis in the collective will of the directorate of Thomas Duff & Co, who were both major principals in their capacity as substantial shareholders of the managed companies, and agents in their capacity as directors. The directorate stood in turn as the principal in relation to a series of subsequent principal-agent relationships within the firm’s managerial hierarchy, which they were able to consciously shape and adapt to growth and changed circumstances.

Chapter 1. The Calcutta Jute Industry, 1870-1921; a quantitative study of the industry. From boom and bust to steady growth.

This chapter provides a detailed quantitative assessment for the first time of the jute industry's growth based upon detailed empirical research of primary source material. A detailed description of the primary source material and the methodology adopted in developing the statistical evidence for this chapter can be found in Appendix 1.

Sketch of Growth of Industry

The Bengali jute industry was initiated in 1855 - when George Acland constructed the Rishra jute mill - catering to domestic markets for packing agricultural exports.[1] By the 1870s, the industry had begun to find export markets. The existing mills were extremely profitable, encouraging a wave of new entrants, who funded the construction of new mills in a wave of investment euphoria in jute mill shares floated on the Calcutta stock exchange. Many of the managing agents who promoted these concerns had no technical knowledge of the industry. Euphoria turned to depression in 1880, followed by a brief upturn, and then prolonged depression through the mid-1880s, leading to the formation of the Indian Jute Manufacturers Association (IJMA) in 1885, which coordinated the consolidation of the industry through a series of short-time working agreements that ran continuously for five years from 1886 to 1891 cutting the working time by up to 50% to limit output and maintain prices. The

[1] Anon., *Jute Mills in Bengal*, (Dundee, 1880), pp. 12-13.

effectiveness of the agreement was reinforced by a ban on investment in new productive capacity.[2]

The summary statistics in Tables 1.1 and 1.2 below indicate the impressive rate of growth of the industry up to 1920 in terms of the number of mills, workers employed, their spinning and weaving capacity and output. In contrast, the quantity of raw jute exported to service the mills of Calcutta's rivals in the world market stagnated from 1890 onwards.

Table 1.1: Growth of Calcutta Jute Industry, 1880-1920, quantities.

Year	(1) Number of companies	(2) Persons employed	(3) Looms	(4) Spindles (000s)	(5) Raw jute exports (million cwt)	(6) Jute consumed by Calcutta mills (million cwt)
1880	19	27,494	4,946	71	6.7	1.9
1890	22	59,541	7,704	157	12.0	3.7
1900	29	102,449	14,119	295	12.4	8.9
1910	40	204,104	31,418	646	12.7	14.6
1920	56	280,431	41,045	856	9.4	20.1

Sources: Columns (1), (2) from *Statistics of British India, Vol 1, Commercial Statistics*, "Progress of the jute mill industry in India."

Columns (3)-(4) from *Statistics of British India*, 1919-20, Vol 1, Commercial Statistics, p.76, "Progress of the jute mill industry in India 1879-80 to 1919-20"..

Column (5) from Kirti Chaudhury, Chapter on "Foreign Trade" in Kumar & Raychaudhuri (eds), *CEHI*, volume 2, p. 851.

Colum (6) 1880 and 1889 figures from Government of India, annual survey of jute mills, 1900-20 figures from IJMA, Annual Report of the Committee 1921, Statement I, "Local Consumption of Raw Jute, p. 211.

Table 1.2: Paid up share capital of Calcutta jute mill companies, 1880-1920, values (money values in constant 1873 rupees, millions).

Year	Paid up capital
1880	23
1890	30
1900	60
1910	109
1920	146

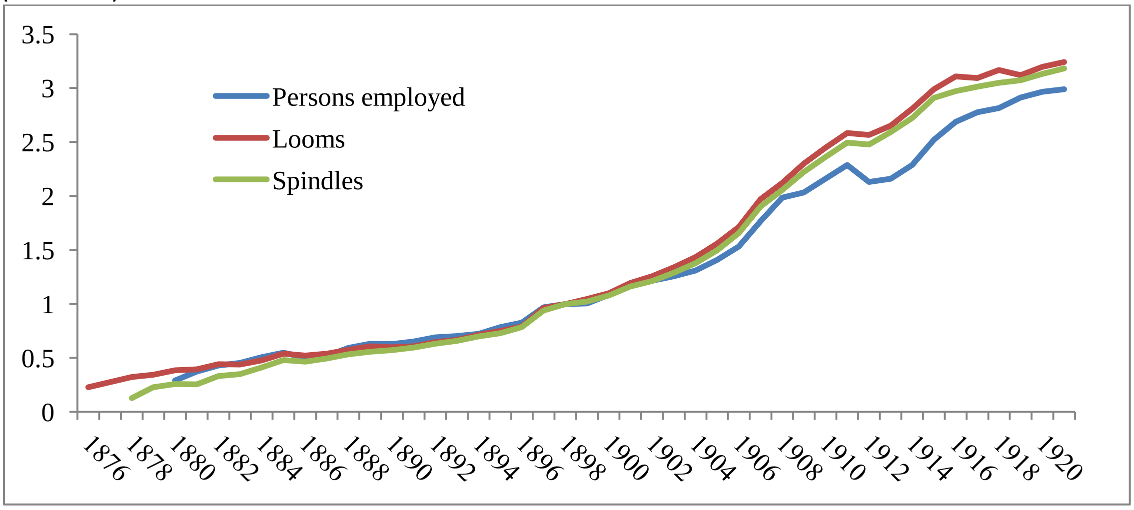
Source: *Statistics of British India, Vol 1, Commercial Statistics*, "Progress of the jute mill industry in India."

[2] Stewart, *Jute and Empire*, pp. 50, 56-7.

Tables 1.1 and 1.2 show the very large increase in productive capacity in terms of the physical quantities of factor inputs and output for the whole period 1880-1920and the value of share capital invested in jute mill companies. There was an overall 920% increase in persons employed while spinning capacity increased 1109% between 1880 and 1920. This suggests that increases in physical capital employed per worker were rather marginal. The overall increase in weaving capacity of 730% as measured in terms of looms employed is slightly misleading because the increasing proportion of wide looms employed for weaving hessian cloth relative to narrow sacking looms led to a rising ratio of spindles employed relative to looms.

Over the four decades under consideration, large additions to productive capacity from a very low base during the 1870s were followed by relatively slow growth in loom capacity amounting to a 56% increase during the 1880s, then accelerating growth in capacity in the 1890s that continued into the following decade. The rate then slowed markedly with the occurrence of a brief recession of 1910-11 followed by the war, which forced plans for further investment to be deferred. The growth of the factors of production employed in the industry is depicted below, taking spindles, looms and workers employed measured in index numbers.

Figure 1.1: Growth of factors of production employed in the industry, 1876-1921, index nos (1900 = 1).



Source: *Statistics of British India, 1919-20, Vol 1, Commercial Statistics*, p.76, "Progress of the jute mill industry in India to 1919-20".

While capturing the accelerating growth of the physical scale of the industry from the mid-1890s up to the war, Figure 1.1 is also remarkable in that it depicts a static relationship in the employment of looms, spindles and workers, which suggests that production techniques underwent limited change over time in so far as they affected the combination of factors of production. This is confirmed by the trends in spindles employed per loom, spindles per worker, and looms per worker.

Table 1.3: Long term industry trends in proportions of factors of production employed.

	1880s	1890s	1900s	1910s
Spindles per loom	17.6	20.9	20.6	20.6
Workers per loom	7.2	7.6	6.9	6.6
Workers per spindle	0.41	0.36	0.33	0.32
Looms per mill	274	348	492	521

Source: *Statistics of British India, 1919-20, Vol 1, Commercial Statistics*, p.76, "Progress of the jute mill industry in India to 1919-20".

The figures for workers per loom and per spindle measure the size of the whole workforce relative to looms and spindles employed. The data indicates an extensive pattern of growth, whereby productive capacity increased by the duplicative addition of new mills utilising similar techniques to the existing physical capital. There appear to have been a very limited realisation of economies of scale in terms of the physical capital employed per worker. In terms of spindles employed per loom, one would expect this ratio to rise, given the increasing proportion of wide looms employed to weave hessian cloth, which required more spindles per loom than narrow sacking looms. Therefore, the stability of this ratio does suggest an improvement in spinning techniques over time. This is supported by reports of the introduction of a more efficient spinning frame at the new Khardah mill, closely followed by the Thomas Duff & Co mills, which was rapidly adopted across the industry[3]:

[3] The new spinning frame was tested in Dundee by Richardson, the city electrical engineer, in January 1904, where it was stated “exactly the spinning machinery of fifty years ago” was in in use. It was said to “have brought about great smoothness in running, and consequently, light and regular driving of the

> [The Calcutta office was] in favour of extending new mill to 900 looms in all, as with the Boyd-Phillip spindle drive the mill engine will have sufficient power to drive the machinery forming 900 looms… The board were pleased to see that the Boyd-Phillips drive was so well thought of by the manager.[4]

Where internal economies of scale were most likely realised was in the increasing size of mill units, which nearly doubled from the 1880s up to the 1890s. Thus, the Calcutta newcomer would have enjoyed a significant advantage in being able to exploit a relative abundance of land and to introduce a more rational application of up to date techniques in industrial architecture and the arrangement of mill machinery more cheaply than its Dundonian competitors, burdened with old capacity. Crucially, they benefitted from the ability to harness the benefits of rapid developments in sources of power, probably the most dynamic aspect of the suite of mechanisms in use in the industry where rapid technical progress occurred. Improvements in engine were followed in the twentieth century by the introduction of turbines and electrification.[5]

Figure 1.2 shows the increasing share of new capacity devoted to hessian production over time to cater to the growth of relatively more profitable outlets for hessian cloth, particularly in the American export market.

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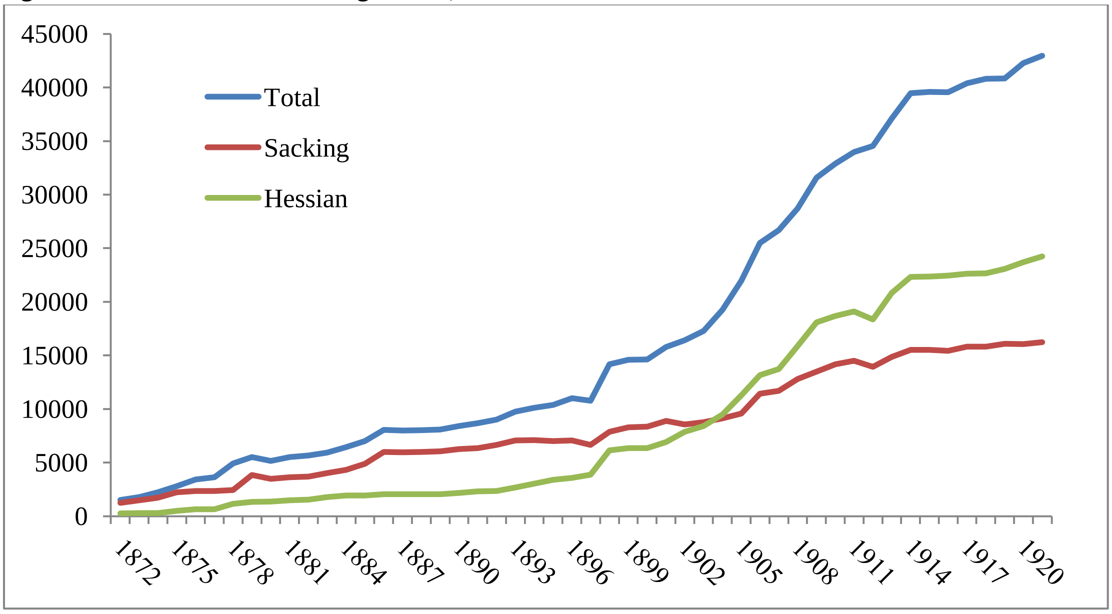
spindles", improving the quality of yarn. The mechanism was driven by an electric motor, driving 71% more spindles per HP. It was self-lubricating, requiring oiling once a month rather than the three times daily oiling of the existing machinery. The advantage of the swing rail mechanism patented by J & T Boyd of Glasgow was that it could be adapted to the existing spinning machinery. The introduction of the frames "would bring about to the mills and factories electric motor power for driving and lighting purposes.", "New Jute Spinning Patent. Successful Venture in Dundee." , *Dundee Courier*, 29 Jan 1904, p. 5. See also "New Development in Jute-Spinning Machinery", *Dundee Courier*, 3 Oct 1904, p. 7.

[4] MS 86/3/1/9, Titaghur Co, p. 186, Minutes of the Directors [henceforth MOTD], 10 Oct 1905; MS 86/3/1/9, Titaghur Co, p. 333 MOTD, 3 Apr 1906.

[5] MS 86/1/1/17, Samnuggur Co, MOTD, 9 Sep 1919, p. 282.

Figure 1.2: Hessian and sacking looms, 1872-1921.



Sources: DR Wallace, *The Romance of Jute*, (Calcutta, 2nd edition, 1928), p. 95. All industry per loom measures in this chapter are derived from this source. Sacking and hessian loom figures from Anon, Jute Mills in Bengal, (Dundee, 1880), p. 88; DR Wallace, The Romance of Jute, (Calcutta, 2nd edition, 1928); annual series 'Jute Mills in India' published by Calcutta firms of jute brokers, Poppe, Delius & Co, JA Dykes & Co, Moran & Co, reproduced in *Friend of India & Statesman*, 1879-83, *Dundee Courier* and *Dundee Advertiser*, Indian Jute Mills Association, Annual Reports 1905-21.

Figure 1.2 demonstrates that the rapid growth in the industry's weaving capacity was dominated by the increasing deployment of hessian looms relative to sacking looms from a low base. The average proportion of sacking and hessian is given below.

Table 1.4: Proportion of sacking and hessian looms employed, %.

	1870s	1880s	1890s	1900s	1910s
Sacking	76%	73%	64%	47%	42%
Hessian	24%	27%	36%	53%	58%

Sources: Anon., *Jute Mills in Bengal*, (Dundee, 1880), p. 88; DR Wallace, *The Romance of Jute*, (Calcutta, 2nd edition, 1928), p. 95.

Thus, a large proportion of the increase in weaving capacity as investment accelerated from the mid-1890s was devoted to hessian looms, although the utilisation of sacking looms started to increase again more rapidly from 1905. It should be noted that there was some adaptability at the margin in terms of the use of narrow and wide looms for sacking and hessian outputs respectively. Mill companies were able to turn some medium width looms to work on sacking or hessian outputs depending on market conditions.[6] Evidence from the minute books of the mill companies managed by Thomas Duff & Co from 1906 to 1913 provides disaggregated data for the relative profitability of sacking and hessian outputs which reveals that the latter were consistently more profitable by an order of magnitude.

Table 1.5: Samnuggur & Titaghur mills, managed by Thomas Duff & Co, average monthly profits per ton of hessian and sacking output (nominal rupees), 1907-13.

Year	Hessian	Sacking	Ratio
1907	70	10	7.3
1908	42	25	*1.7
1909	30	8	3.9
1910	11	4	2.5
1911	23	7	3.2
1912	72	22	3.2
1913	91	13	7.2
Average	**49**	**13**	**3.8**

* Result reflects the sharp economic contraction in the US market for hessians from May 1907 to June 1908.

Source: Derived from regular monthly statements of working accounts in UDA, MS 86/1/1/10-15, Samnuggur Co, Minutes of the Directors [henceforth 'MOTD']; MS 86/3/1/10-14, Titaghur Co, MOTD.

While it would have been rational for new mills to have specialised in hessian lines of production, the technical constraints on doing so were insurmountable, given the spatial and geographical structure of the Calcutta jute industry. Unlike in the more geographically concentrated environs of Dundee, a specialised division of labour between spinning, weaving and calendaring establishments – together with the development of speciality lines such as carpets - did not emerge in the period of this study.[7] In Dundee, smaller firms might specialize in one activity while larger firms integrated them. The Calcutta mills were constructed as integrated spinning and weaving establishments from the start. Crucially, the mid-range

[6] See Champdany Co. 7/1/2/2/1, MOTD, 1873-9, 9 June, 1875.

[7] See listings of "Mill and Factory Managers" in the "Trades and Professions" section of the annual *Dundee Directory*, whose notation indicates a division of labour between spinning mills, weaving factories, finishing calendars, and foundries for the maintenance of machinery, passim.

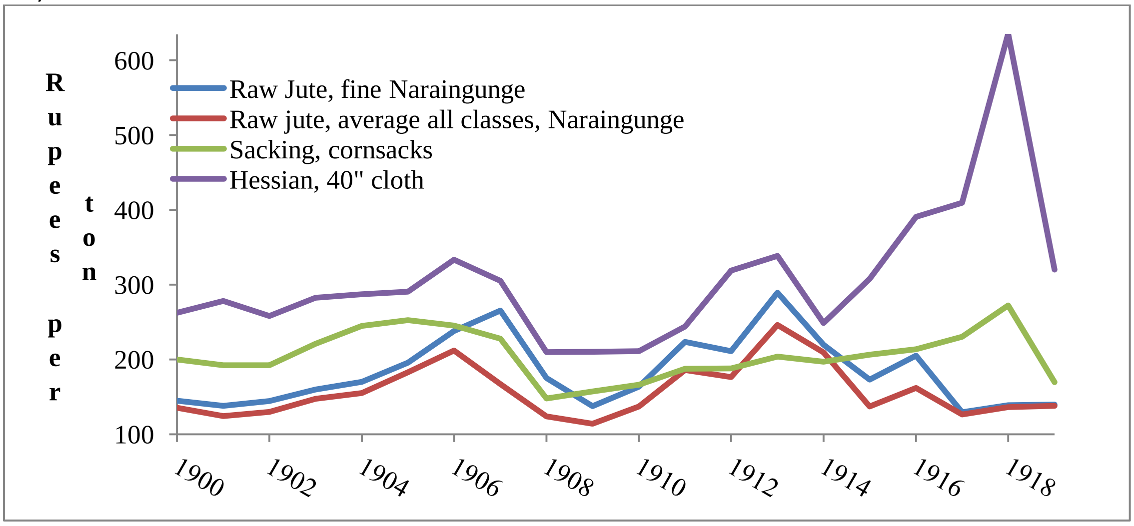
qualities of raw jute assortments could either be used for hessian warp yarn or for sacking weft yarn. Therefore, the most cost-effective way to process raw jute assortments of various qualities of jute suitable for sacking or hessian outputs was to produce a mix of sacking and hessian outputs.[8]

The cost structure of the jute industry

What were the long term trends in the value and quantity of raw jute by the Calcutta mills and in the output and sales of jute manufactures?

Figure 1.3 shows a price series for fine Naraingunge jute and an average of all classes of Naraingunge jute, compared with price series for hessian 40 inch cloth and for cornsacks, the most common sacking output.

Figure 1.3: Raw jute and jute manufactures, relative prices per ton of (Rs, constant prices, 1873 = 1).



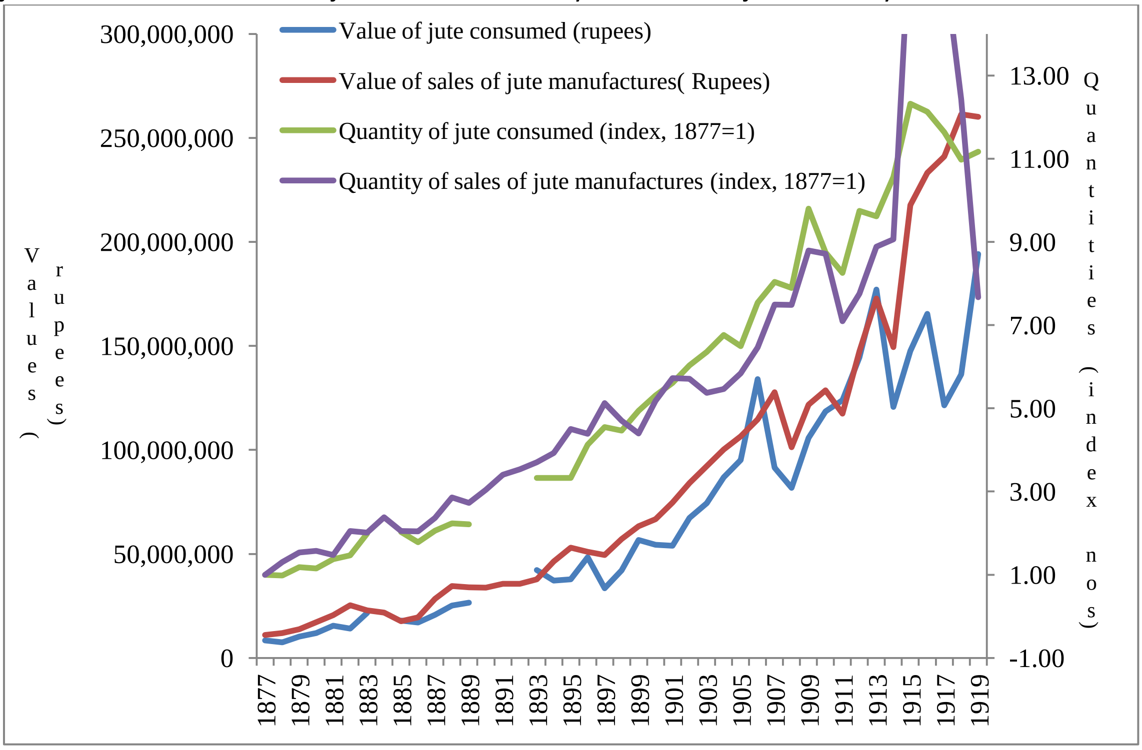
G. H. Le Maistre, *Investors India Year Book (IIYB),* 1920 (Calcutta, 1921), p. 114, "Area under Jute, Outturn and Prices, 1900-19."

[8] See UDA, MS 86/1/1/8, Samnuggur Co, MOTD, p. 66, 27 Nov 1901; "[The agents] estimate that [the jute stock] contains 35% of hessian warp, 25% of hessian weft and sacking warp, and 40% of sacking weft, and totals in all 440,000 m[aun]ds. They also state that in full normal working the requirements will be 23%, 50% & 27% of the above respective qualities. On this basis the stock shows a surplus of hessian warp and sacking weft and a considerable shortage of hessian weft and sacking warp, and is thus badly balanced and handicaps buying operations as regards taking advantage of the relatively cheap price at which medium and low jute can now be purchased."

The two comparisons show the close correlation of raw jute prices from 1900 up until the war with the most common sacking and hessian outputs.[9]

It is possible to construct estimates to calculate the long-term trend in the cost structure by examining three main sources, Government of India annual statistics for foreign and coastal trade in raw jute and jute manufactures, Government of India annual returns of jute mills and data provided by the Indian Jute Mills Association annual reports from 1904.

Figure 1.4: Estimated values (Rs, constant prices, 1873 = 1) and quantities (index nos) of raw jute consumed and sales of jute manufactures by the Calcutta jute industry.



Sources: Government of India, *Statistical Abstract of British India*, series on jute mills in Bengal 1876-90; Government of India, *Annual Statement of the Trade and Navigation of British India with Foreign Countries, and of the Coasting Trade of the Several Presidencies and Provinces*; Government of India, *Annual Statement of the Seaborne Trade of the Bengal presidency with Foreign Countries and Indian Ports*; Indian Jute Mills Association, *Report of the Committee for the year ended 31st December 1921* (Calcutta, 1922), p.211, "Statement I. Local Consumption of Raw Jute including Cuttings as returned yearly by Members…", and p.217, "Statement VII. Comparative Statement of Annual Jute Forecasts, Consumpt of Jute by Local Mills, Exports of Jute and Gunnies and Imports of Jute."

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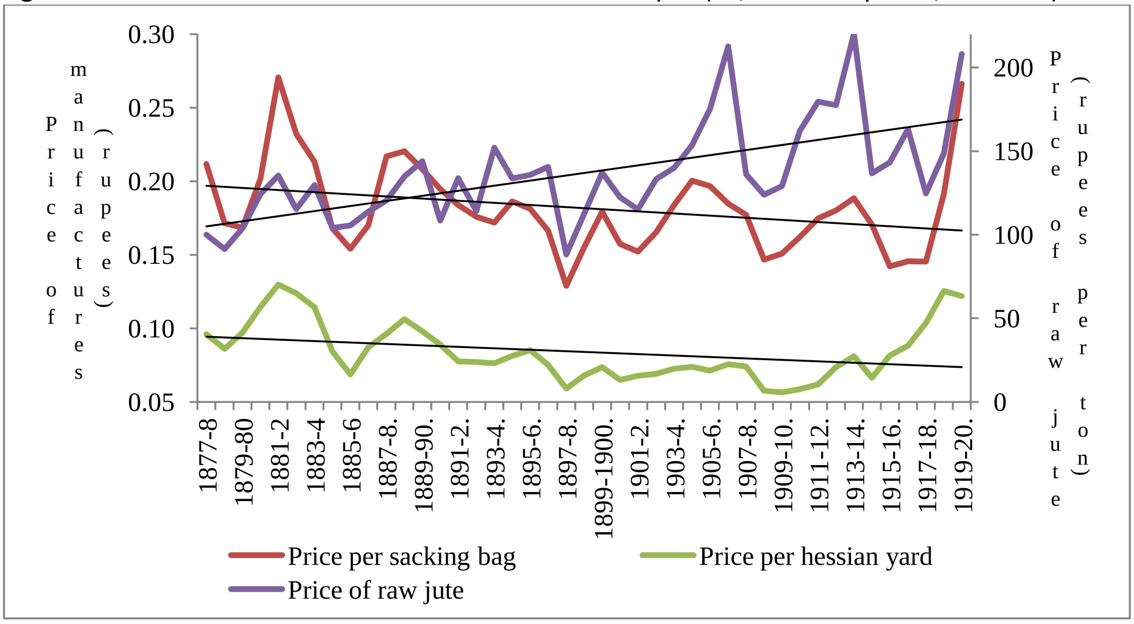
9 It is difficult to draw conclusions about value added as the two classes of raw jute listed correspond to jute marks used in spinning hessian weft and warp; average prices for inferior marks of raw jute would be required to calculate value added in sacking manufacture.

Figure 1.4 reinforces the evidence above of the rapid extensive growth of the industry over time. Values and quantities of inputs and outputs followed the same long run trend apart from during the war period from 1914.

Discontinuities in price series, mismatches in annual reporting periods, the difficulty of isolating raw jute that was exported from that which was consumed domestically, and the difficulty of matching different qualities of inputs and outputs are discussed further in the appendix below. These factors make it difficult to estiumate standardised price series for aggregated units of inputs and outputs for the Calcutta industry over time in order to test correlation between input and output prices. However, the price series for the average of all classes of Naraingunge jute does correspond reasonably well to the mix of qualities of the raw material used in the manufacture of warp and weft threads woven into hessian 40 inch cloth, price series for which are both shown in Figure 1.3. Excluding the war years, when input and output prices behaved very differently, these two price series for the period 1900-13 were highly correlated, with a correlation coefficient of 0.90. The category "all classes of Naraingunge jute" corresponds less closely to the mix of qualities of raw material used in cornsacks and other sacking outputs than it does for hessian cloth and other hessian outputs. Nevertheless, the price series for all classes of Naraingunge jute for 1900-13 was also closely correlated to the price series for cornsacks in Figure 1.3, with a correlation coefficient of 0.80. This price series for raw jute, when compared to a price series constructed from IJMA figures for sacking and hessian output by estimating a standardised price per ton of output for the period 1905-13 gave a correlation coefficient of 0.89. The three coeeficients were all statistically significant at the 1% level. Together, these results would suggest that the hypothesis that raw jute prices were by far the most significant determinant of output prices cannot be discounted, making it vital for jute manufacturing firms to control their raw material costs to operate profitably.

Figure 1.5 examines long-term trends in prices for inputs and outputs, (although the units are incommensurable).

Figure 1.5: Price of raw material and manufactured output (Rs, constant prices, 1873 = 1).



Sources: Government of India, *Annual Statement of the Trade and Navigation of British India with Foreign Countries, and of the Coasting Trade of the Several Presidencies and Provinces*; Government of India, *Annual Statement of the Seaborne Trade of the Bengal presidency with Foreign Countries and Indian Ports*, DR Wallace, *The Romance of Jute*, (Calcutta, 2nd edition, 1928), p. 95.

The long term trend was for the real price per unit of manufactures to fall until the war while the real price of raw jute rose considerably, suggesting increased competition for inputs and outputs. The path followed by the real price of standardised bags demonstrates the increasing dominance of hessians, followed by a brief period where huge increases in sacking output during the war reversed this trend. The stability of real sacking prices during the war is interesting, as it may indicate that large war time profits were based less on "profiteering" than on the large volumes of war orders for sacking at a fixed mark up, (combined with a reduction in working hours), which also had the indirect effect of forcing up hessian prices to very high levels.[10]

In order to draw inferences about productivity, it is necessary to take into account fluctuations in annual working hours, which varied considerably under the aegis of the short-time working agreements introduced periodically by the IJMA. While no precise data exist for average long-run working hours across the whole industry, precise data do exist for the mills managed by Thomas Duff & Co. From the reports of various Indian Factory Labour Commissions, it appears that these mills worked marginally shorter hours than many of the other mills.[11] Nevertheless, the total working hours of all the mills followed the same trend over time as the mills managed by Thomas Duff. If we take these hours to broadly represent the trend, an approximate estimate of the trend in the consumption of inputs and production of outputs per loom per hour can be attempted, as in Figure 1.6 below. The level will represent an overestimate for the reasons stated above and also because the Hooghly mill remained outside the IJMA until the early 1890s in order to work longer hours and the Hastings mill worked a night shift with electric light for several years during the mid-1890s.[12] The series is presented from 1883 because the data for hessian sales prior to that year is given in unintelligible units of "pieces".

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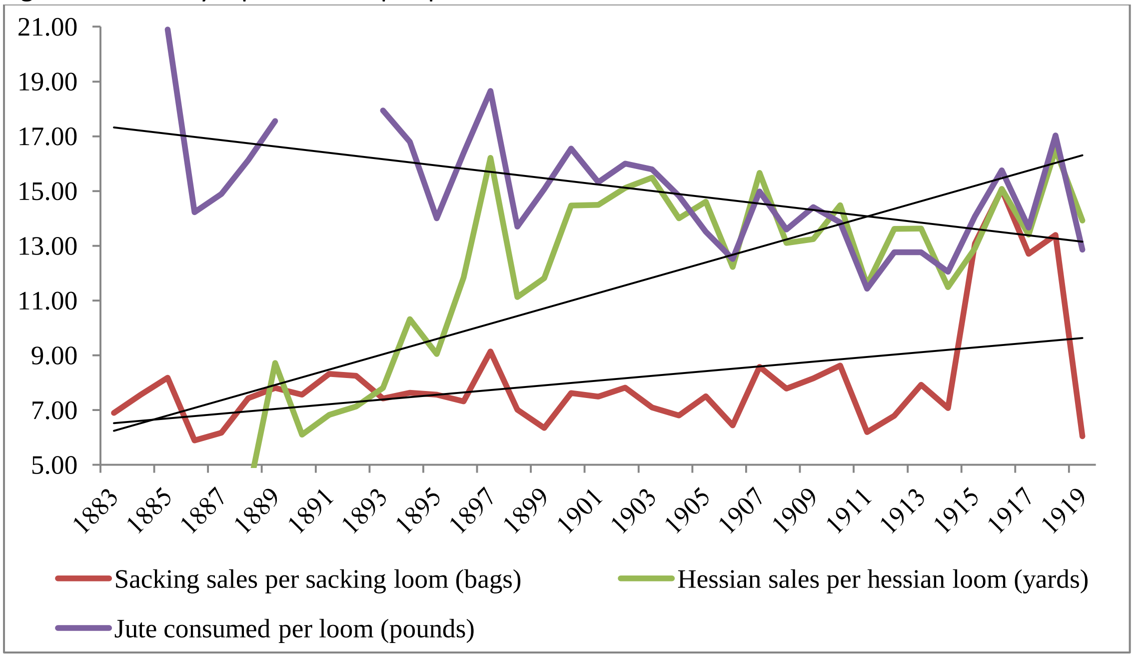
[10] Goswami, *Industry, Trade and Peasant Society*, pp. 92-96.

[11] Sir John Leng MP, Letters from India and Ceylon, (Dundee, 1896), Chapter on "The Indian Dundee", pp. 630-8; Indian Factory Commission, *Report of the Commission on Indian Factories*, 1890 (London, 1891), pp. 87-94; Indian Factory Labour Commission, Report and Appendices, Volume I, (London, 1908), p. 675, pp. 707-14.

[12] MS 86/1/1/2, Samnuggur Co, MOTD, 1 Jun 1886, p. 133; MS 86/1/1/4, Samnuggur Co, MOTD, 30 May 1894, p. 373.

Figure 1.6: Hourly input and output per loom.



Sources: Government of India, *Annual Statement of the Trade and Navigation of British India with Foreign Countries, and of the Coasting Trade of the Several Presidencies and Provinces*; Government of India, *Annual Statement of the Seaborne Trade of the Bengal presidency with Foreign Countries and Indian Ports*, DR Wallace, *The Romance of Jute*, (Calcutta, 2nd edition, 1928), p. 95. Calculation of hourly working from UDA, MS 86/1/1/1-7, Samnuggur Co, MOTD, and MS 86/3/1/1-6, Titaghur Co, MOTD, 1872-1900, monthly estimates on working account; MS 86/5/13/9 Thomas Duff & Co, "Working Hours".

A number of trends may be remarked on, although it should be noted that the units of the three variables are incommensurable. The trend was for the hourly consumption of raw jute per loom to fall while the three different measures of hourly output per loom increased substantially. The decline in the former can be accounted for by the increasing utilisation of hessian looms, manufacturing a less bulky product, but it also reflects a more efficient utilisation of raw material. The minute books of the Champdany Co. and of the mills managed by Thomas Duff & Co. suggest that wastage – measured as the differential between the weight of output for a given input - was reduced from about 12% in the 1880s to about 3% by the war. The most notable aspect of the rise in hourly output per loom is the rapid improvement in hessian outputs up to the end of the century before they stabilised. One explanation for this trend might be the piecemeal way in which small numbers of hessian looms were added to total capacity through the extension of existing mills and that mills experienced difficulties rearranging their spinning to efficiently meet the new configuration of weaving capacity. From the mid-1890s, the wave of investment in new mills identified in Tables 1.1 and 1.2 allowed firms to pursue a more systematic approach to integrating additional capacity for hessian production. Another important factor explaining the rise in overall hourly output would seem to be the more efficient application of sources of power, with firms investing in much larger engines, while introducing more efficient methods of harnessing engine power through adopting newer techniques in shafting and driving that permitted spinning and weaving machinery to be run at a faster pace.[13] Another, related, factor would be the difficulties mills experienced initially in selecting the appropriate qualities of raw jute to produce a satisfactory quality of output in these new, more sophisticated product lines.[14]

Jute Stocks and Strategy.

It is difficult to calculate with confidence the proportion of raw jute costs relative to the total costs of production of jute manufactures for the industry as a whole with the available data. This data does exist for firms such as the Titaghur Co. and the Champdany Co., managed by Thomas Duff & Co. and Finlay, Muir & Co. respectively.

Table 1.6: Raw jute, % of total costs.

	1870s	1880s	1890s	1900s	1910s
Champdany Co	62%	66%	67%	69%	64%
Titaghur Co	n/a	58%	65%	69%	69%

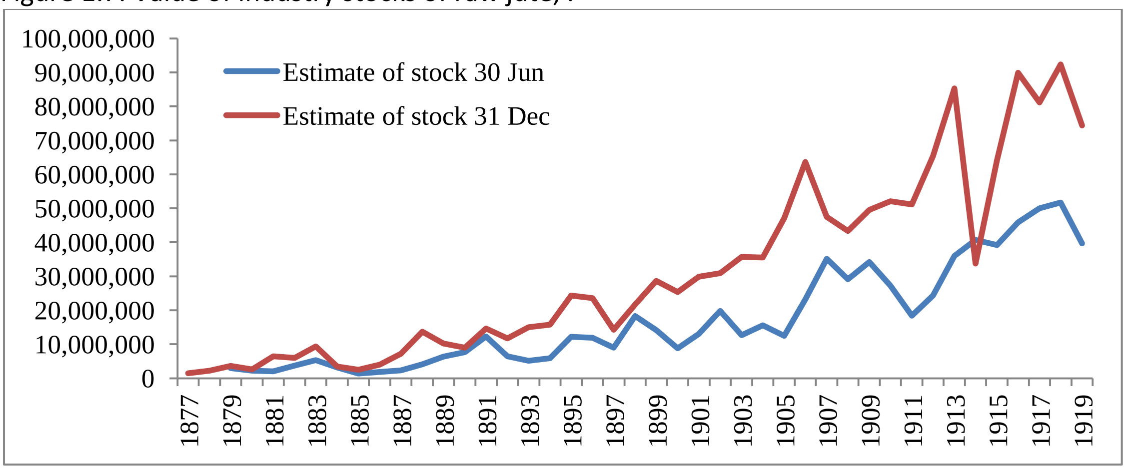
Glasgow University Archive, MSS UGD 91/7/1/2/1/1-2, Champdany Co, General Meeting Minutes, MSS UGD 91/7/1/5/1-3, Champdany Co, Annual Reports and Accounts, MSS UGD 91/7/3/1/2, Champdany Co, Balance Sheets and Profit and Loss Accounts; UDA MS 86/3/5/1-5, Titaghur Co, Half-yearly balance sheets, Reports of the directors, balance sheet, working account and profit and loss account.

[13] Leng, *Letters from India*, pp. 72-82.

[14] MS 86/3/1/4, Titaghur Co, MOTD, 9 Mar 1897, p. 360.

These figures indicate that the cost of jute was the most significant component of total costs over time, until the exceptional conditions of the war transformed the raw jute market into one favouring purchasers with the slump of effective overseas demand. Assuming that these firms were representative of the industry trend, profitability depended to a large extent on the minimisation of raw jute costs. In the context of a long term secular trend for the real price of raw jute to rise, combined with short-term fluctuations in price, as different firms in a growing industry competed for raw materials, firms within the industry sought to develop strategies to minimise the cost of the raw material while controlling the risk of market fluctuations through the timing of their purchases of raw jute. This involved a complex calculation based on expectations of relative changes in prices in the raw jute market, in the market for jute manufactures and in the money market which firms relied on to borrow funds to raise working capital. Figure 1.7 shows the estimated rise in the real value of jute stocks held by the Calcutta industry, based on the half-yearly reports of the majority of firms whose accounting half-years ended on December 31st and June 30th.

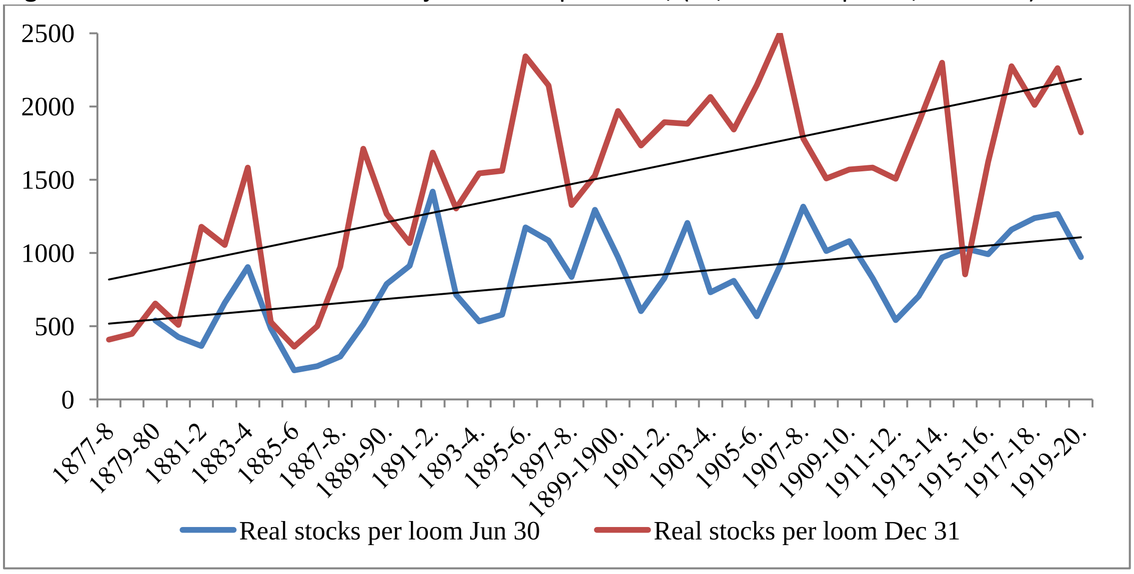
Figure 1.7: Value of industry stocks of raw jute, .



Sources: Estimated from aggregated half-year reports of the majority of individual mill companies that reported at 30 June and 31 December in Anon., *Jute Mills in Bengal* (Dundee, 1880), *Dundee Advertiser*, *IIYB*.

Jute purchases were concentrated in the months from September to December when the new crop came on to the market, peaking in October and November.[15] Stocks held on December 31st increased more rapidly over time than stocks held on June 30th, at the end of the jute season. What was the trend in real terms raw jute stocks held per loom?

Figure 1.8: Real terms value of raw jute stocks per loom, (Rs, constant prices, 1873 = 1).



Sources: Estimated from aggregated reports of individual mill companies in Anon., *Jute Mills in Bengal* (Dundee, 1880), *Dundee Advertiser*, *IIYB*.

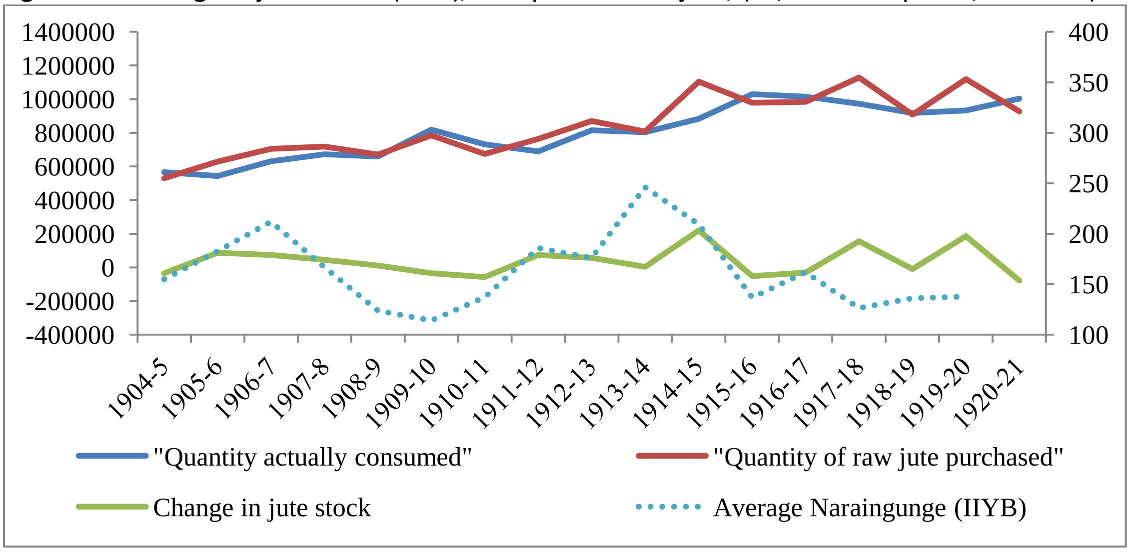
The trend indicated in Figures 1.8 was for a rising real value of jute stocks per loom. Therefore, firms' profitability depended not only on their control of raw material costs, but on their management of these rising costs over time.[16]

[15] IJMA, *Report of the Committee*, 1918 (Calcutta, 1919), pp. 160-2. Statements IV – VI, 'Imports of Jute into Calcutta" give monthly figures for jute imported by rail, road and river transport.

[16] See Appendix for estimates which show a long-term trend for rising volumes as well as values of physical jute stocks per loom.

IJMA figures can be compared with the price of raw jute at Naraingunge, the biggest market, for the period 1904-1919.

Figure 1.9: Change in jute stocks (tons)/ real price of raw jute, (Rs, constant prices, 1873 = 1).



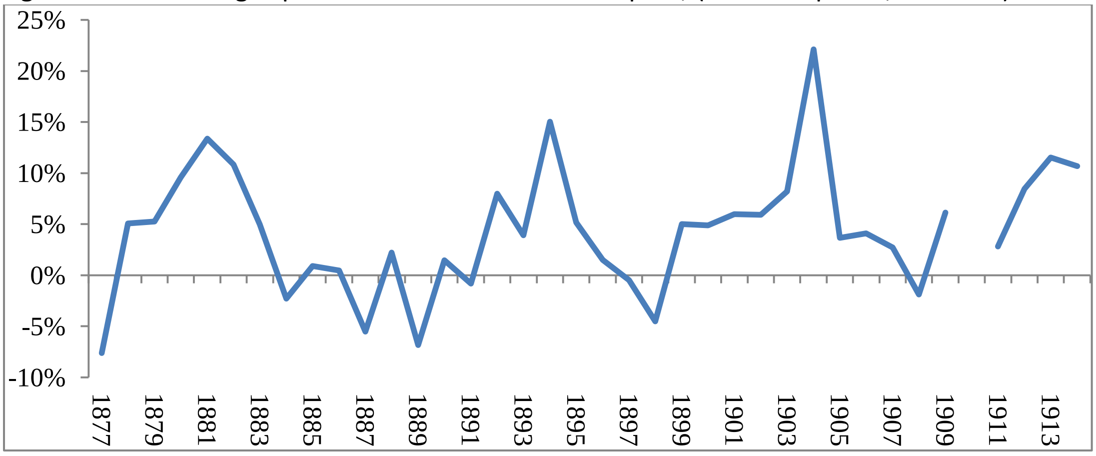
Sources: Indian Jute Mills Association, *Report of the Committee for the year ended 31st December 1921* (Calcutta, 1922), p.211, "Statement I. Local Consumption of Raw Jute including Cuttings as returned yearly by Members…"; Government of India, *Statistical Abstract of British India*, "Jute, Bengal, first assortment (average of maximum prices)."; G. H. Le Maistre, *Investors India Year Book, 1920* (Calcutta, 1921), p. 114, "Area under Jute, Outturn and Prices, 1900-19. Average price per 400 lbs of Naraingunge jute."

The evidence suggests that the rise in the real value of jute stocks per loom was not simply an artefact of the rising real price of jute, or of the shift to hessian production requiring more expensive marks of jute as an input. The long term trend was for jute stocks held at December 31st to rise from about 8 tons per loom to about 14 tons, and from 5 to 7 tons at the end of the jute season at 30th June. The IJMA data support the evidence that there was a rise in the quantity of jute stocks, with the change in jute stocks remaining positive in most years from 1904. Typically, firms sought to ensure they had secured the bulk of their requirements, particularly for the finer marks of jute used in hessian manufacture by the end of December, then to continue purchasing for the remainder of the season until the end of June at 50% of the rate at which they were using up their stocks, in order to ensure they had sufficient stocks at the end of the season to carry them over to the new season. Crucially, large jute stocks permitted firms to enter into forward contracts, ensuring a degree of certainty about future profits. It appears that firms lacked the financial resources to pursue this strategic logic from season to season, an inherently more risky endeavour in any case given the uncertainty surrounding the future course of the following year's jute crop compared to making predictions during the course of the season. Both these parameters were briefly suspended in the exceptional conditions obtaining during the war. Paradoxically, the abundance of jute during the war led firms to carry over larger stocks from year to year while being less concerned to engage in strategic purchases at the height of the season from September to December. Uncertainty about the future demand from government orders and the availability of shipping for exports on the free market would also have been contributing factors. As will be shown in Chapters 3-4, the ability to purchase jute at low prices was central to the competitive advantage developed by Thomas Duff.

Working capital

Given the imperative that firms should be able to purchase large stocks of jute in specific months of the year, it was essential that firms should be attentive to the management of their working capital in addition to raising the long term investment funds to be sunk in fixed capital. This required firms to seek sources of short term liquidity on reasonable terms to finance their investment in liquid assets. Figure 1.10 and Table 1.7 shows the trend for the industry's total working capital relative to total invested capital in fixed assets. Working capital is estimated by taking liquid assets, (good debts owing, stocks of raw material and inventory, and any external investments in short term assets), and subtracting current liabilities, (short term loans from banks or managing agents, other outstanding debts owed.

Figure 1.10: Working capital as % of total invested capital, (constant prices, 1873 = 1).



Sources: Aggregated from individual mill company half-yearly reports to 1913 published in *Dundee Advertiser*, *Investors India Year Book*, 1913-21.

Table 1.7: Working capital, % of total invested capital.

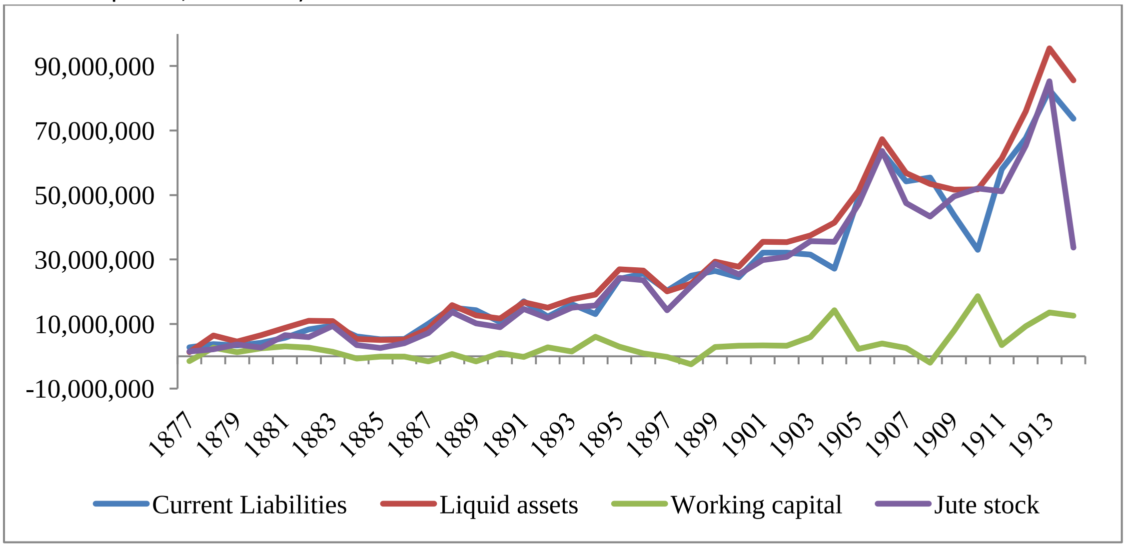
	1870s	1880s	1890s	1900s	1910s	1870-1913	1870-1921
Industry average	1%	3%	4%	7%	35%	5%	14%

Sources: *Dundee Advertiser*, *IIYB*.

From 1877 to 1913, liquid assets generally exceeded current liabilities, working capital averaging 5% of total invested capital, although it was negative in seven of these years, suggesting that the industry was well capitalised and did not have to rely on short-term financing to meet its long-term obligations. The decade of the war presents a radically changed picture with firms investing large financial surpluses in a variety of government securities, such as war bonds, presumably to minimise their liabilities to a rising incidence of corporate taxation.

Figure 1.11 shows the absolute increase in the industry's demands on short term capital markets for liquidity, and the close correlation between jute stocks and liquid assets – and by extension current liabilities - until their divergence during the exceptional conditions of the war.

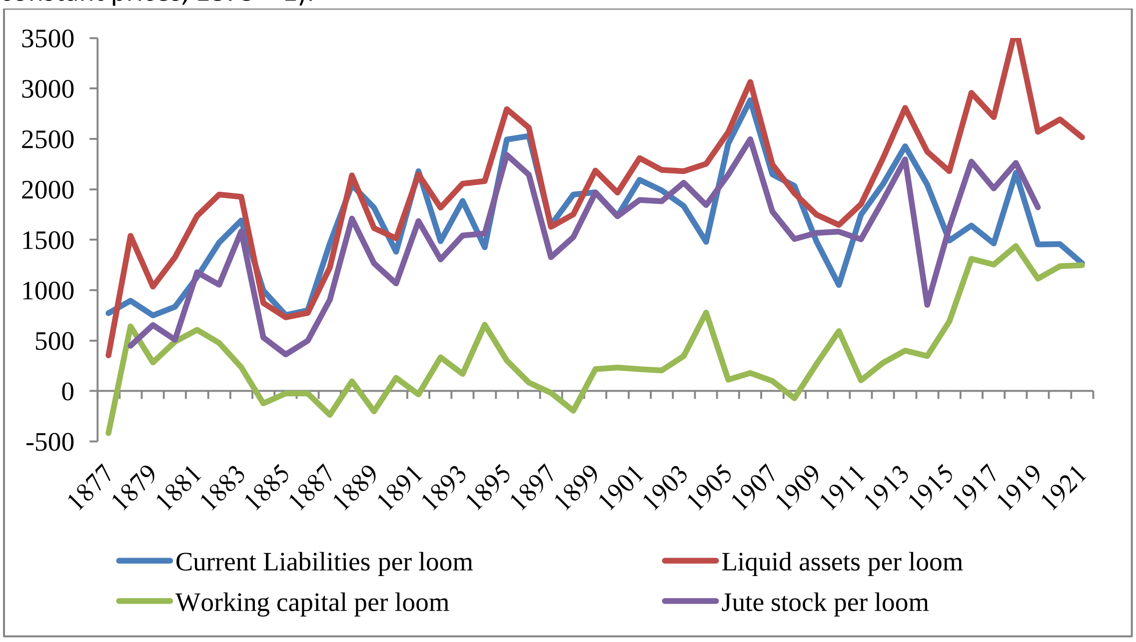
Figure 1.11: Estimates of working capital, current liabilities, liquid assets, jute stock, (Rs, constant prices, 1873 = 1).



Sources: *Dundee Advertiser*, *IIYB*.

Figure 1.12 presents the same data on a per loom basis, suggesting that there was a real terms increase in the short term financing requirements of the industry, which is consistent with the discussion in the previous section in relation to the rising trend in jute prices and the value of jute stocks per loom.

Figure 1.12: Per loom values of liquid assets, current liabilities, working capital, jute stock (Rs, constant prices, 1873 = 1).



Sources: *Dundee Advertiser*, *IIYB*.

Of course, without considering the short-term interest rates on loans for working capital, for which data is scant, it is impossible to evaluate how efficiently managing agents behaved in meeting the short term financing needs of the mills they manage. Accounting practice evolved by the 1890s so that loans were often not shown as a separate item on the published balance sheet but were lumped in with "debts". Moreover, the provenance of these loans was also often not disclosed when in fact loans were often made to the jute mills by the managing agents themselves. It is difficult to ascertain whether the agents derived rents from this service at the expense of the mills or whether the mills benefitted from access to short-term liquidity on more favourable terms than they might otherwise be able to obtain, either directly from the agents of with agents using their own assets as collateral on behalf of the mills obtaining a bank loan.[17]

Cost of fixed capital

The other key component of the cost structure of the industry was the cost of investment in fixed capital – defined in company accounts as land, buildings, machinery and transportation equipment. Was there any systematic cheapening of the Calcutta mills' expenditure on fixed capital over time? There is no precise way to calculate the incremental cost of additions to loom capacity for the industry as a whole because aggregated measures of expenditure on fixed capital include elements such as depreciation and the value of equipment written off. An alternative measure is used in Table 1.8 below, taking decadal averages for the real cost of equipping new mill companies. This is measured on a per loom basis in order to obtain a standardised unit that permits comparison, following the convention in the business pages of

[17] See, for instance, James Finlay & Co acting as guarantors of a loan to the Champdany Co, MS UGD 7/1/2/2/3, MOTD 1883-9, 22 Sep 1886. Jardine Skinner were said to receive "heavy charges for interest on advances" from the Kamarhatty and Kanknarrah mills under their management, *Capital*, 3 Mar 1904, p. 368, "Managing Agents of Jute Mills."

the newspapers of the time, but includes in the numerator investment in all categories of fixed capital required to equip a new mill.

Table 1.8: Initial cost of investment in fixed capital, per loom, (Rs, constant prices, 1873 = 1).

	1870s	1880s	1890s	1900s	1910s
Cost per loom	5068	5746	5398	4681	4269

Sources: *Dundee Advertiser*, *IIYB*.

Table 1.8 suggests that the cost per loom to new mill companies did decline steadily from the 1880s in real terms. However, the decline in the value of the rupee until its stabilisation at the end of the century put rupee companies at a disadvantage in taking advantage of any cheapening of the cost of machinery in sterling terms. The evidence from the turn of the century is consistent with Bagchi's finding that the price of importing jute textile machinery from the UK was static from 1904-14. There is qualitative evidence that British manufacturers of textile machinery, for weaving, spinning, winding and driving machinery in Dundee, Leeds, Belfast and Greater Manchester respectively developed long-term relationships and brand loyalty with specific Indian jute manufacturers. These relationships were mutually beneficial. British machinery manufacturers in each segment were able to protect their customer base from incursion by competitors while Indian jute manufacturers were able to negotiate discounts and favourable treatment in the expeditious performance of repairs when required. However, periods of boom where the jute manufacturers rushed to introduce new capacity led to significant bottlenecks which drove up machinery prices.[18] This coincided with a trend for

[18] The directors of Thomas Duff & Co referred to a two-year delay in ordering spinning machinery from Fairbairn of Leeds in 1907: "New mill:- a telegram was received from Mr Smith advising that several Calcutta firms were floating new mills forthwith and that there were rumours of others following suit, and suggesting that, if the board are seriously inclined in the near future to proceed with a new mill, it would be advisable to get the first refusal of machinery. Communication has already been had with Messrs Fairbairn regarding this, who advise that machinery for a 600 loom mill could not be given until the autumn of 1909, and agreeing to hold themselves open for reply by March, and not to book orders from others without giving this company the first option." MS 86/5/1/3, Thomas Duff & Co, MOTD, 24 Dec 1907, p. 5.

the British manufacturers in each segment to merge into large combines – Combe-Barbour in Belfast, Fairbairn-Naylor in Leeds, and Urquhart Lindsay & Robertson Orchar Ltd in Dundee came to dominate the manufacture of winding and preparing, spinning, and weaving machinery respectively – which may have shifted negotiating terms in the favour of the sellers of machinery. In 1922, these firms merged into a combine.[19]

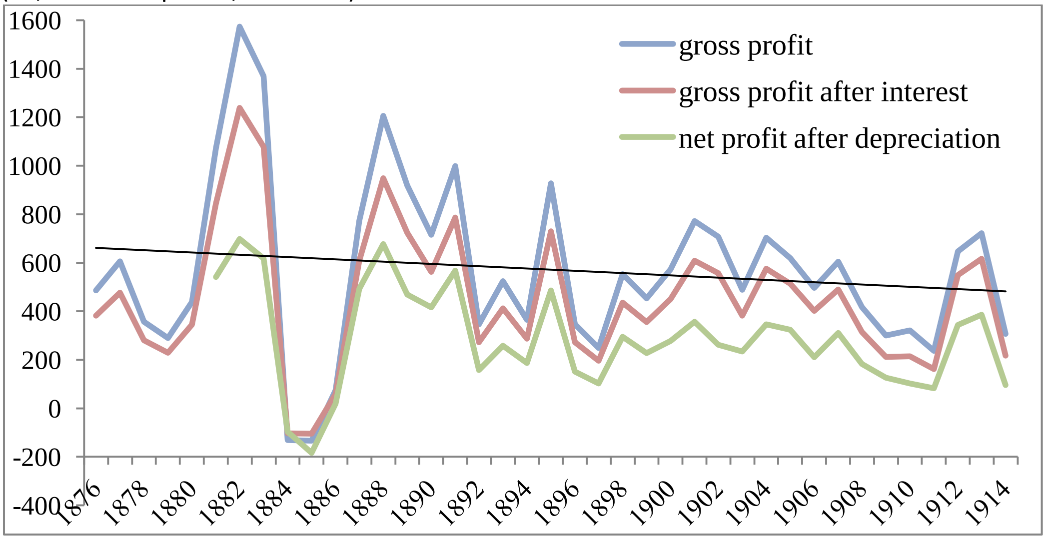
As outlined in the previous two sections, the industry's costs were rising due to the increasing price of raw jute but fixed capital costs were static. The next section examines the profitability of the industry.

[19] 'Abridged Prospectus. Fairbairn Lawson Combe Barbour Limited with which is associated Urquhart Lindsay & Robertson Orchar Ltd.", *Scotsman*, 9 Feb 1922, p. 4.

Profitability

Most accounts which refer to the profitability of the industry during this period are based on rather impressionistic evidence derived from dividend payments. In this section, a precise measure of the long-term trend in profitability is developed from firm-level data, aggregated and deflated, as detailed in the appendix.

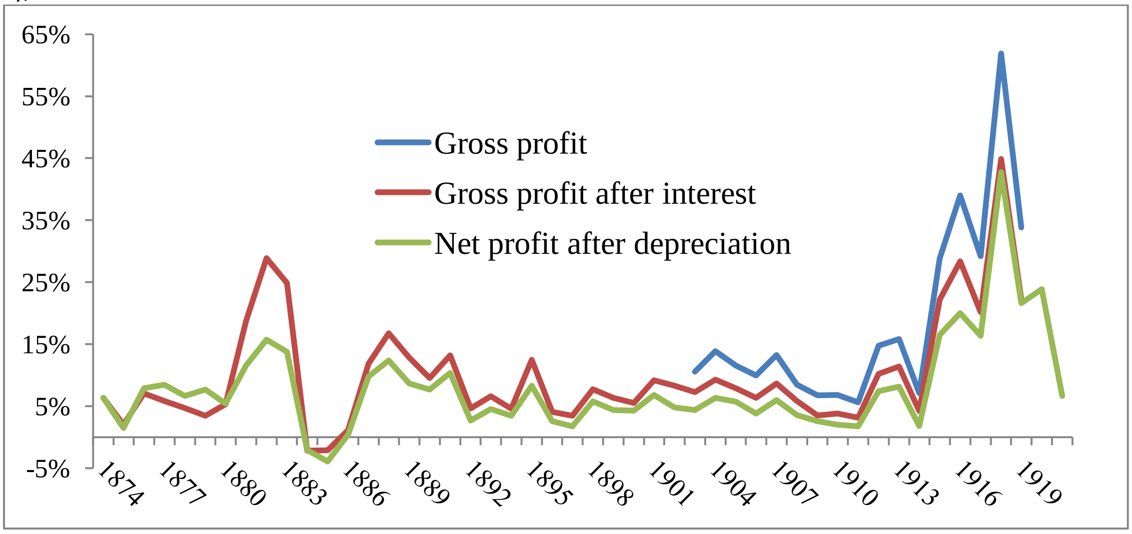
Figure 1.13: Gross profit, gross profit after interest, net profit after depreciation - per loom, (Rs, constant prices, 1873 = 1).



Sources: *Statesman (Friend of India)*, *Dundee Advertiser*, *IIYB*, *Capital* (Calcutta).

Figure 1.13 depicts the long term trend in the Calcutta jute industry's profitability. The long term trends are closely aligned for different measures of profit taking into account interest payments on loans and depreciation. There was considerable volatility in profitability from the 1870s to the 1890s as the infant jute industry sought to establish itself in India. Increases in loom capacity coincided with weak demand in domestic and export markets in the late 1870s and mid 1880s to produce crises. The industry responded to the latter crisis by establishing the Indian Jute Manufacturers Association. Short time working, and agreed restrictions on investment in new capacity helped to stabilise the industry in the late 1880s by managing the growth of supply to correlate more closely to the growth in demand. The industry secured a rapidly increasing mass of profits although the long term trend in real profit per loom was declining up until the wartime boom, suggesting that increased competition and the tendency of supply to outstrip demand offset advantages gained from the introduction of more advanced production techniques embodied in new investment in fixed capital. An alternative measure of profitability in the industry is to take the real returns, in constant prices, of profits relative to investment in fixed capital.[20]

Figure 1.14: Profitability, returns to gross expenditure on fixed capital, (constant prices, 1873 = 1), 1874-1921.



Sources: *Dundee Advertiser*, *IIYB*.

Table 1.9: Profitability, (gross profits, gross profits after interest and net profits), return to gross expenditure on fixed capital, %, (all constant prices, 1873 = 1).

	1880s	1890s	1900s	1910s
Gross profit			10.6%	24.3%
Gross profit after interest	11.6%	7.3%	7.2%	17.1%
Net profit after depreciation	7.2%	5.1%	4.8%	13.8%

Sources: *Dundee Advertiser*, *IIYB*.

Whichever measure of fixed capital is employed (see appendix), the long term trend in profitability from the 1880s is one of decline from the 1880s to the 1890s despite the prolonged crisis of the mid-1880s, followed by stagnation from the 1890s to the 1900s. The

[20] See Appendix _ for alternative measures, which follow a similar trend.

downward trend was interrupted in the following decade with the explosion of wartime demand coupled with declining raw jute prices.

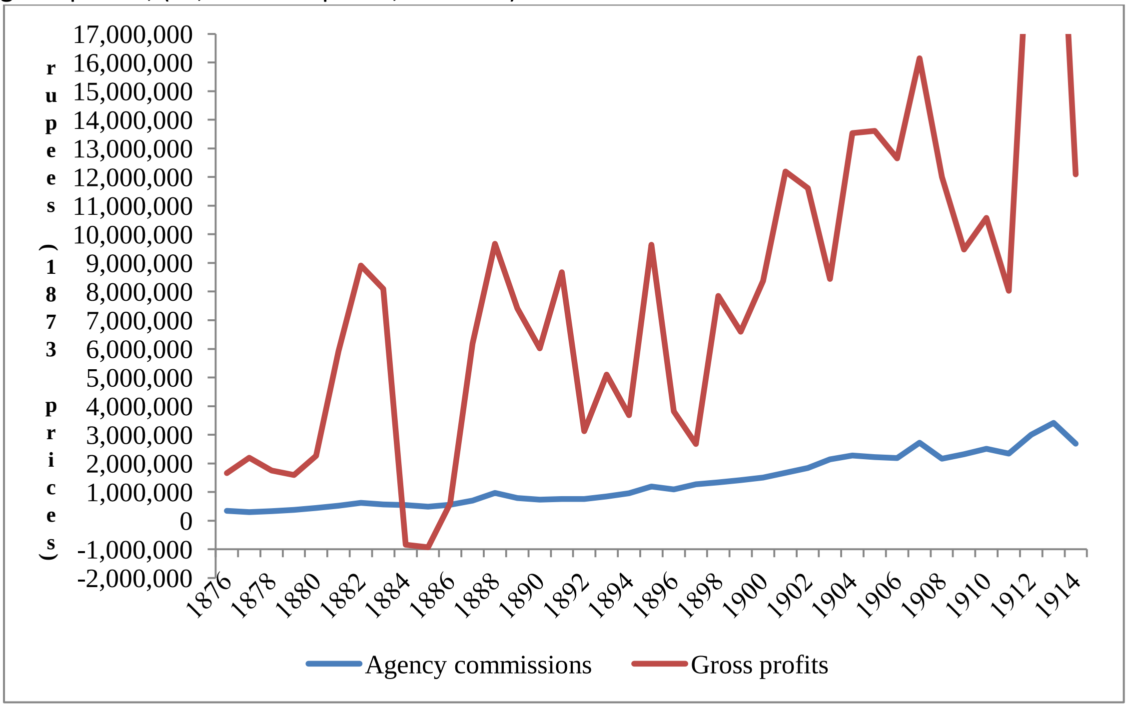
Managing agents' commissions - a charge on profits?

The figures above may understate the level of the industry's profitability depending on how commissions paid to the mill companies' managing agents are conceptualised. The jute mill companies' annual reports, on which the industry data above for profitability are calculated, presented the income paid to their managing agents as a cost item in their working accounts. Exact figures for commissions were not published in company reports.

Combining the data about the rates of commission charged with industry-level data for sales and gross profits, the trend in total industry commissions is estimated below by aggregating estimates of individual firms' commissions based on profits with those based on sales. The estimates below assume that the rate of commission charged by agents remained unchanged from 1904 to 1919, although the evidence suggests it probably fell slightly.[21]

[21] This seems a reasonable assumption. The evidence from Thomas Duff & Co. suggests that commissions as a percentage of sales may have reduced slightly across the industry, meaning that my calculation is an overestimate. On the other hand, the overestimate for sales based commissions from 1904 may well be balanced over time by a rising level at which incomes were fixed for those agents paid commissions based on profits.

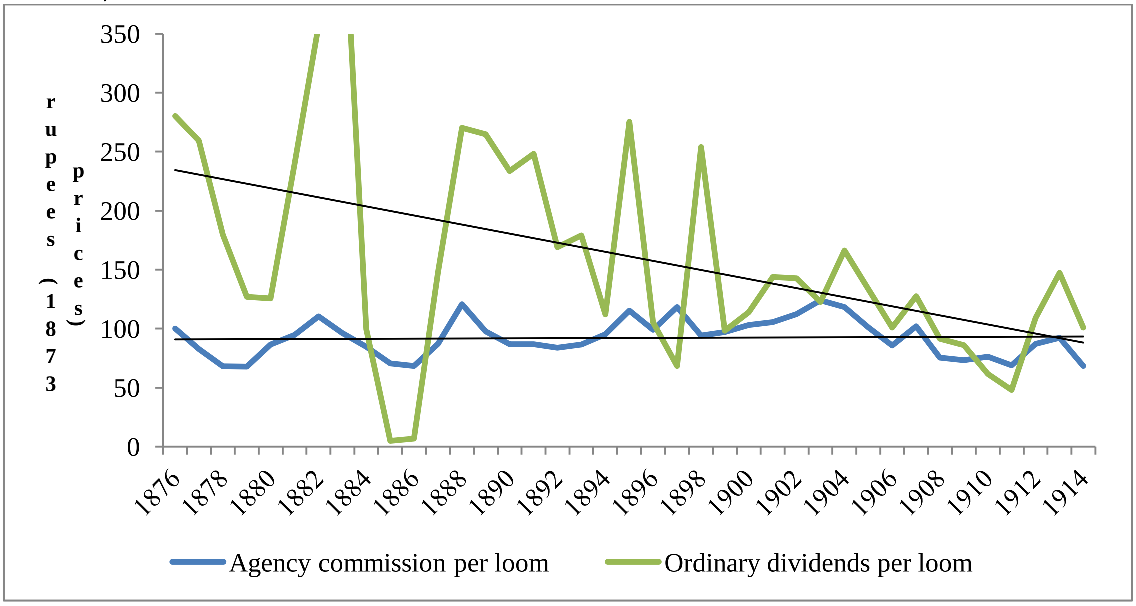
Figure 1.15: Total commissions earned by managing agents of Calcutta jute mills, relative to gross profits, (Rs, constant prices, 1873 = 1).



Sources: *Dundee Advertiser*, *IIYB*. Trends in commissions estimated from comparison of surveys in Anon., *Jute Mills in Bengal* (Dundee, 1880), pp. 91-2, *Capital*, 3 Mar 1904, p. 368, "Managing Agents of Jute Mills.", also references to level of commission of individual mill companies in half-yearly reports and in UDA MS 86, Samnuggur Co, Victoria Co, Titaghur Co, Thomas Duff & Co, GUA MSS UGD 91 James Finlay & Co, Finlay, Muir & Co, Champdany Co.

From 1876 to 1919, total commissions paid to managing agents of the Calcutta mills increased from approximately Rs 350,000 to Rs 150,00,000 in 1919. For the two years in which rates of commission were surveyed, 1879 and 1903, it can be stated with greater confidence that agency commissions rose from Rs 4,70,000 to Rs 25,00,000. Figure 1.16 below shows graphically the relative stability of the estimated commission income earned by managing agents of jute mills compared to dividends paid to shareholders, which were much more volatile and correlated more closely to sharp fluctuations in industry profitability over time. Across the industry, sales-based commission remained an important form of agency income while the level at which the minimum and fixed income elements of profits-based agency commissions were set insulated agents from the volatility experienced by shareholders.

Figure 1.16: Managing agency commissions, ordinary dividends - per loom (Rs, constant prices, 1873 = 1).



Sources: As above, Figure 1.15.

Taking the trends depicted in Figures 1.15-1.16 for the whole period 1876-1914, commission per loom remained stable while dividends and profits proved much more volatile. Over time, profits and ordinary dividends per loom declined while commissions remained relatively stable, although this was reversed during the war. Over time, managing agents receiving commissions were insulated from the volatility facing shareholders. Table 1.10 gives a more differentiated picture by taking decadal averages up to 1919 and includes data for commissions as a percentage of sales. In years were profits were relatively low – 1884-6, 1897, 1911 - agency commissions exceeded dividends paid to shareholders.

Table 1.10: Managing agency commissions, relative to sales, profits and dividends, %, (constant prices, 1873 = 1).

	1870s	1880s	1890s	1900s	1910s
% total sales	2.8%	2.6%	2.2%	2.1%	2.0%
% gross profits	19%	21%	21%	18%	14%
% ordinary dividends	40%	48%	70%	82%	60%

Sources: As above, Figure 1.15.

Comparison of Figure 1.16 and Table 1.10 shows that managing agency commission per loom was stable or rising slightly while declining as a proportion of industry sales. This is explained by the trend to rising sales per loom depicted in Figure 1.6. The fact that the managing agents were insulated from the volatility of the market could be disguised by rising sales and the reduction of commissions as a percentage of sales over time. Total commissions paid to agents, (ignoring whether they were calculated on the basis of sales or profits), declined nearly 30% measured as a proportion of sales. Commissions were quite stable as a proportion of decadal profits but declined in the 1910s when exceptional profits were earned during the war. It is striking that agency commission doubled as a proportion of dividends up to 1910, then declined in the exceptional decade of the war.

The industry rate of profit on sales was 15% during the same period. If we assume that all agents' profit on jute mill commissions above 15% represented a form of rent, the conclusion would be that 39% of commission income constituted rent based on the Thomas Duff & Co. example. For the sake of argument, how would the relative levels of industry profits, dividends, and commissions have been affected if managing agents had charged a "market" mark up on the services they provided based on the industry rate of profit relative to income, and their rents redistributed to shareholders? Based on these crude figures, reported gross profits would have been on average 5% higher from 1877-1919, or 32.2% instead of 30.7% return on the net expenditure on fixed capital, including reserves, all measured in constant prices. Ordinary dividends would have been 22% higher, representing a 13.4% rate of return on the ordinary share capital measured in constant prices, rather than 11%.

A question arises about why shareholders, the principals in these companies, allowed their agents to continue to charge such high fees. Conceptually, it is debateable whether these commissions represented a payment for a service as opposed to a claim on profits. Only a small portion of agency commissions went to cover the costs of the services provided by the managing agents, the remainder being profit to the agent. It is possible to posit the counterfactual that, in the absence of managing agencies which duplicated many of the functions of a board of directors, the jute mill companies' reported profits and returns to fixed capital would have been substantially higher. For example, the firm of managing agents, Thomas Duff & Co., whose directors also sat on the boards of the Samnuggur, Titaghur and Victoria mill companies and were paid directors' fees for their trouble. For the period 1883-1921, the directors of Thomas Duff & Co. were paid dividends by the agency equivalent to 54% of the total commission income paid by the mills they managed.[22] If this case is representative, only 46% of commissions were required to cover agents' costs, which suggests that they were very successful at commanding large rents based on their power to manipulate market "imperfections" to their advantage. Effective control of jute mill companies was vested in the hands of the managing agents or boards of directors appointed by the shareholders to oversee the day to day running of the firm's operations even if the nominal, juridical constitution of the public limited company formally conferred control on the shareholders. Formally, the companies' articles of association enshrined the sovereignty of the shareholders as the legal owners of the firms to have the final say over fundamental issues of firm strategy – such as the new issues of share capital to finance expansion – through a system of voting in proportion to shares held at annual or emergency general meetings. In practice, strategic decisions were made where the directors or agents negotiated with shareholders at the interface between effective and formal control. The functioning of these asymmetrical power relationships is explored more fully in Chapters 3 and 4.

[22] MS 86/5/1, Thomas Duff & Co, Minutes of Annual General Meetings (AGMs).

Ownership, investment capital structure and competing claims on profits

This section considers the changing share capital structure of the Calcutta jute industry. Jute mill companies were able to finance the investment in additions to fixed capital more cheaply over time by diversifying their sources of investment funds away from ordinary share capital by issuing a mix of preference share capital and debenture capital which commanded a lower rate of return. Nominal rates of return to investors in different categories of investment capital are contrasted with real rates of return. Finally, an aggregated share price index of the ordinary shares of jute mills listed on the Calcutta stock exchange is constructed in order to examine how closely investors' expectations of the jute mills' dividend payments aligned with actual performance. Table 1.11 shows the changing composition of investment funds raised by the industry to finance expansion.

Table 1.11: Distribution of categories of invested capital including debentures, decadal averages.

	1870s	1880s	1890s	1900s	1910s
Ordinary shares	98%	91%	67%	48%	45%
Preference shares	0%	0%	14%	27%	30%
Debentures	2%	9%	19%	26%	26%

Sources: *Dundee Advertiser*, *IIYB*.

As the leading industry in Eastern India, the jute mills commanded an important position as a destination for investment funds raised on the Calcutta stock exchange. Therefore, Table 1.11 serves as an index of the burgeoning complexity of the Calcutta capital market and the differentiation of investment funds by different levels of risk relative to expected returns. Ordinary shares served as the sole form of equity in which shareholders could take a stake in the ownership of jute mills until the introduction of preference shares at the beginning of the 1890s. This was the most risky form of investment as no return was guaranteed to the ordinary shareholder. Ordinary shares therefore correlated most closely to profitability, with high dividends paid in years of high profits and no dividend paid in years of low profits. From the point of view of the managers of the jute mill companies – the board of directors appointed by the shareholders or the managing agents – the obverse was true of ordinary shares. Raising investment funds through issuing ordinary shares was the least risky option but the most costly as ordinary shareholders had a legal right to share fully in the profits of the company once it had met its other financial obligations.

In relation to the specific question of the changing capital structure of the industry, it is sufficient to note that the need to attract investment funds into the nascent industry of the 1870s – and thus for managing agents and other parties to obtain income streams from the associated rents and capital gains generated – could sometimes generate a contradiction between the short term imperative to generate high dividend payments and the longer term strategic goals of financial prudence in order to set aside sufficient funds for depreciation in order to secure long term returns through growth.

While ordinary shares dominated as the main form of funding for investment in the industry during the 1870s and 1890s, (91-98% of invested funds), their share fell sharply in the 1890s, to 67%, and by the 1910s, to 45%. The decline of the 1890s coincided with the consolidation of the industry and the concentration of effective control in the hands of those managing agents which had survived the crises of the early- and mid-1880s and had established a reputation for relative financial probity, which restored shareholders confidence in the ability of the industry to deliver high but stable returns. As the worst effects of the Long Depression eased, a wave of investment in new capacity was embarked on in the early 1890s, mainly by managing agents who were already established in the industry.[23] This led to the introduction of a new form of equity share capital, preference shares, with less risk to the shareholder. Preference shares offered a fixed rate of annual return, whereby dividend payments would be made in preference to dividends on ordinary shares. In years where profitability did not permit the

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[23] Leng, *Letters from India*, p. 89.

payment of any dividend on preference or ordinary shares, the outstanding balance owing on the preference shares would be paid in future years, reducing the funds available for payment of ordinary dividends. Since this category of equity offered a fixed rate of return below the average rate of return paid out in previous years to ordinary shareholders, they represented a relatively cheap way of raising investment funds to managers. On the other hand, preference shares entailed a higher risk of non-payment with knock-on effects on firms' ability to pay ordinary dividends and maintain their share price, especially for those firms with a below-average performance.

Clearly, the issue of preference shares had a significant impact on firms' future capacity to pay ordinary dividends. Therefore, legally, they could only be issued in tandem with new issues of ordinary capital offered to the existing shareholders of the companies. Once issued, however, these shares were also publicly traded and their share price listed on the Calcutta stock exchange, which raises a priori the possibility of differentiation over time in the ownership of preference shares and in the ownership of ordinary shares. In the 1890s, preference shares made up 14% of the value of invested funds in the industry, rising to 30% by the 1910s, or 40% of total equity.

The trend towards financing expansion through raising fixed-income investment funds poses a question about the ownership and effective control of the companies and the obligations of the directors or agents to safeguard the interests of the shareholders or principals by maximising returns. This consideration is linked to the analytical question of measuring firm performance, as it is theoretically possible to conceive of a firm paying relatively high dividends on ordinary shares – with a share price to match – on the basis of raising most of its investment funds by other means. Thus, the share price might be misleading as an indicator of the firm's profitability relative to its competitors, as a high dividend rate might be paid on a relatively small mass of ordinary dividends relative to total dividends and payments of debenture interest. In practice, the ability of firms to leverage themselves through external borrowing on debentures was restricted to a proportion of the firm's nominal capital in the articles of association, although firms' frequently operated with a large subscribed but uncalled share capital relative to called-up share capital to circumvent this restriction.

The third category of investment funding derived from the issue of debentures, which did not confer any ownership rights on the holder – but was a form of raising funds on the stock market in the form of long-term loans from individual savers at a fixed rate of interest slightly above bank rate. Debentures were issued with a date for redemption of the principal, typically for a period of 15-20 years, at the conclusion of which new debentures might be issued at the prevailing rate of interest. This was the cheapest way of raising investment funds but the most risky as debenture debt represented an external obligation and cost on working account and non-payment would leave the firm in default. The share of investment funds in the industry raised in this way rose steadily from a negligible proportion in the 1870s to 26% by the 1910s. The share of debentures in total invested funds started to decline during the period of war-time prosperity. This suggests that the improved financial position of the mills led them to a reorientation towards securing higher returns to their equity shareholders, (or to benefit from the capital gains associated with a booming share price), while being less concerned about the cost of raising new investment capital. Debentures declined from a peak of 31% of funds invested in the jute industry in 1915 to 17% in 1921.[24] Clearly, the character of debentures made them more attractive to risk-averse investors willing to accept a lower guaranteed rate of return than on equity, and the constituencies for holding jute mill debentures may have been significantly different to holders of jute mill equity. What returns did the investors in Calcutta jute mill companies receive? Table 1.12 contrasts the aggregate payments of ordinary

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[24] Calculated from *IIYB*.

& preference dividends, together with debenture interest, relative to the total funds invested in ordinary and preference shares, and in debentures, measured in nominal and real terms.[25]

Table 1.12: Nominal and real returns (constant prices, 1873 = 1) to total invested capital – ordinary and preference dividends and debenture interest, decadal averages.

	1870-1921	1870-1913	1870s	1880s	1890s	1900s	1910s
Nominal	11.6%	7.9%	10.8%	7.3%	7.2%	6.7%	23.8%
Real	9.2%	7.3%	10.7%	7.2%	6.4%	5.8%	14.3%

Sources: *Dundee Advertiser*, *IIYB*.

The nominal return is 'significantly' above the real return in all decades and the discrepancy becomes very marked in the inflationary decade of the 1910s. The measure of real returns clearly indicates a long term trend of declining payments to shareholders and debenture holders relative to total invested capital which was interrupted by the war. Table 1.13 compares real rates of return on ordinary shares, preference shares and debentures over time, expressing all values in constant 1873 prices.

Table 1.13: Real % rates of return on dividends and debenture payments, decadal averages (nominal rate in brackets)

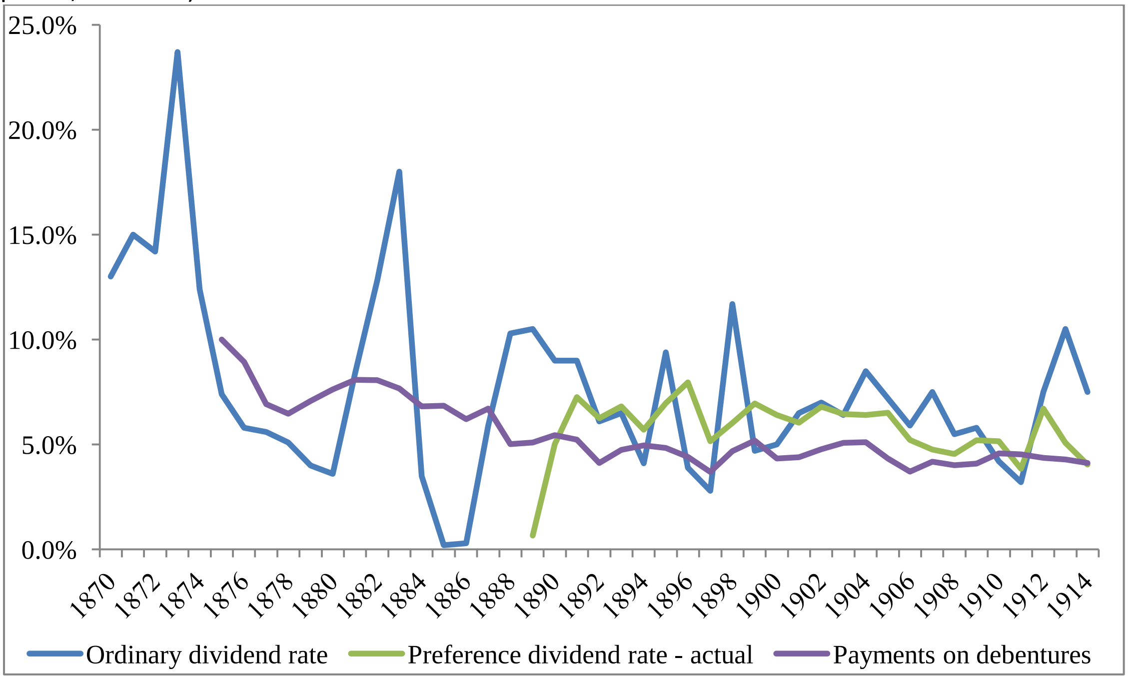
	1870-1921	**1870-1913**	**1870s**	**1880s**	**1890s**	**1900s**	**1910s**
Ordinary	12.1 (16.6)	7.7 (8.5)	10.6 (10.7)	7.4 (7.4)	6.7 (7.7)	6.5 (7.9)	25.1 (43.7)
Preference	5.9 (6.7)	6.6 (6.7)			7.3 (7.0)	5.8 (6.4)	5.1 (6.5)
Debentures	5.2 (5.9)	5.6 (6.0)	7.9 (9.1)	6.8 (6.8)	4.7 (5.2)	4.4 (5.0)	4.0 (5.3)

Sources: *Dundee Advertiser*, *IIYB*.

[25] In calculating the returns to investors in jute mills, nominal returns given in constant prices are misleading for the purpose of considering changes over time, due to price inflation associated with the depreciation of rupee and war-time supply-side constraints. Moreover, the real value of returns was also influenced by the time lag between funds being invested and the income generated in later time periods. In order to calculate changes in the real value of dividend payments and debenture interest paid out over time, the stock of different categories of invested funds has been calculated by aggregating the value of funds invested in constant prices in the time period when the investment was made. The stock of invested funds measured in constant prices is then compared with the income generated as dividends or debenture interest measured in constant prices.

For the whole period 1870-1913, real returns to ordinary shareholders averaged 7.7%, only marginally above the 6.6% return to preference shareholders. Taking the period 1870-1921, ordinary shareholders earned on average 12.1%, demonstrating the windfall earned over a short period during the war. In the 1890s, dividends to ordinary shareholders lagged behind dividends paid to preference shareholders, indicating the squeeze on dividend payments as a corollary of increased competition and lower profitability. The declining rate of fixed income offered to owners of debentures and preference shares over time indicates the increasing influence of general trends of declining profitability and a more plentiful supply of savings seeking a profitable return in the world economy making themselves felt in the Indian market for share capital. The trend is shown graphically to 1914 in Figure 1.17 below.

Figure 1.17: Real returns on different categories of invested capital, 1870-1914, %, (constant prices, 1873 = 1).



Sources: *Dundee Advertiser*, *IIYB*.

While the graph indicates that the long term trend in the level of ordinary dividend payments declined in real terms from the levels of 1870s and 1880s, overall, dividend payments were much more stable from the 1890s up to the eve of the wartime boom, and less risky for investors with the increasing share of preference capital and debentures in total invested capital. Jute mill companies achieving an average level of profitability and paying average dividends had little difficulty in attracting subscribers to expand their invested capital to finance expansion. Despite the declining real-terms trend from the 1870s and 1880s, dividend payments were paid at a level that remained attractive to shareholders despite the increased supply of alternative investment opportunities with the rapid pace of diversification of Eastern Indian industry during the period[26]. The jute mills' ability to finance expansion through the issue of less costly preference shares and debentures also suggests that there was a process of deepening capital markets through the primary medium of the Calcutta stock exchange, facilitated by improved sources of information to investors in publications such as the Calcutta weekly financial newspaper *Capital* and the annual *Investors India Year Book*.

It should be noted that the increasing use of preference shares and debentures in the industry meant that dividends paid on ordinary shares over time are not a good indicator over time of the total returns to investors. Higher returns on ordinary shares were maintained at the expense of a narrowing base of ordinary share capital relative to total capital over time.

In order to attract investors to finance expansion as the scale of the industry increased, jute mill companies and their managing agents could not rely solely on informal personalised exchanges with their inner circle of business confidantes – managing agency partners, their lawyers, share brokers, trading partners, creditors, family members and skilled employees. These certainly comprised the "inside shareholders" of the firms who could be safely relied on to vote with the agents in all important decisions affecting the firms' strategic direction and their presence is clearly demonstrated by the roster of attendees and the half-yearly meetings of the shareholders reported in the pages of *Capital*. However, formal, public exchange

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[26] As delineated in the summary histories of different industries in *Investors India Year Book*, passim.

between the firms and a wider shareholding public was also required. Thus, with the exception of Birkmyre Brothers' privately owned Hastings mill, (and for a period from the 1870s up to 1894, when it went public, the Clive mill concern), all mills were public companies with a share listing on the Calcutta stock exchange. The Sterling companies were listed on the Dundee and Glasgow stock exchanges, and later in London.[27] The Sterling companies had a secondary listing in Calcutta and most had converted to rupee companies by 1918.[28] The evidence is overwhelming from the pages of the English language newspapers in Calcutta (and Dundee), that jute mill shares were by far the most actively traded species of shareholding in Calcutta for most of the period, with regular listings of transactions in ordinary shares for most companies appearing on a weekly basis. The declining denomination of rupee shares listed on the Calcutta stock exchange shows that they attracted a more popular class of shareholder over time – from the thousand rupee share denomination of the Gourepore Company in the 1870s to the typical hundred rupee denomination throughout most of the period up to the war, when the great majority of firms commenced the process of redesignating their share capital in ten rupee denominations.[29] Another indication is the development over time of active secondary markets in shares and a network of agents assigned by the jute mill companies as brokers who supervised these markets, as witnessed by the increasing prominence of Marwari share brokers dealing in jute mill equity futures.[30] As public limited companies, the firms' long term share price played an important signalling function in attracting future shareholders to finance expansion, making it a strategic imperative that ordinary dividends should be paid at a (sustainably) high level if the firm was to expand

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[27] The Barnagore Co was listed on the London Stock Exchange from 1875: 'Money and Commerce', *Scotsman*, 15 Jun 1875, p. 7.

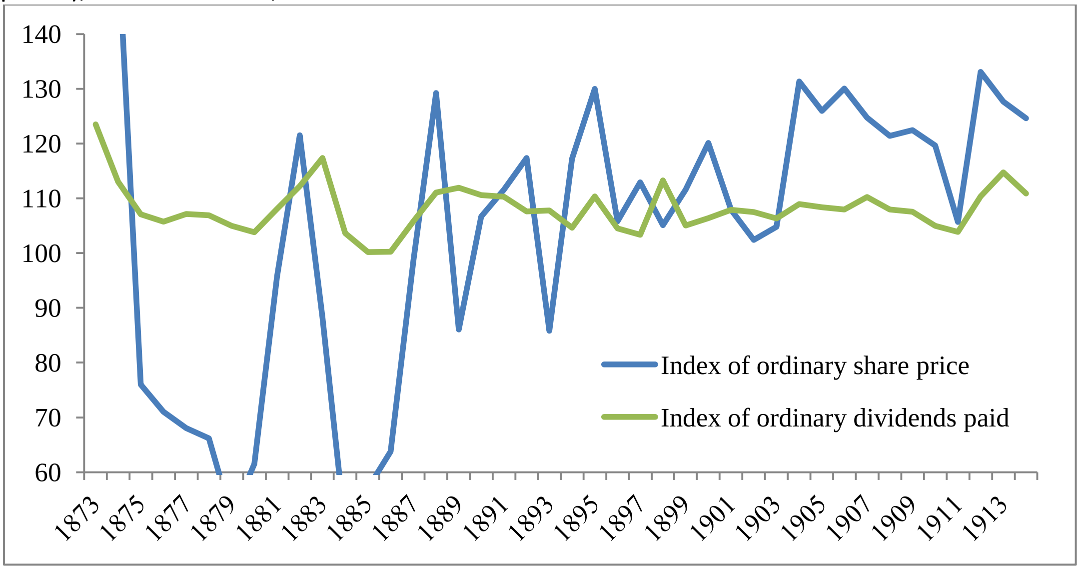
[28] The Barnagore Co was listed in Calcutta by 1892, and the remaining five *Sterling* companies by 1904: *Capital*, 13 Jan 1892; *Capital*, 7 Jan 1904, p. 42.

[29] "The Calcutta Stock and Share List" published in *Friend of India*, 3 Jun 1875, p. 8; Rs 10 denominated jute mill shares appear in *Investors India Year Book* from 1917.

[30] Thomas A. Timberg, *The Marwaris; from Traders to Industrialists* (Delhi, 1978), Chapter 7; 'Calcutta Jute Market', *Dundee Courier*, 2 Apr 1900, p. 4.

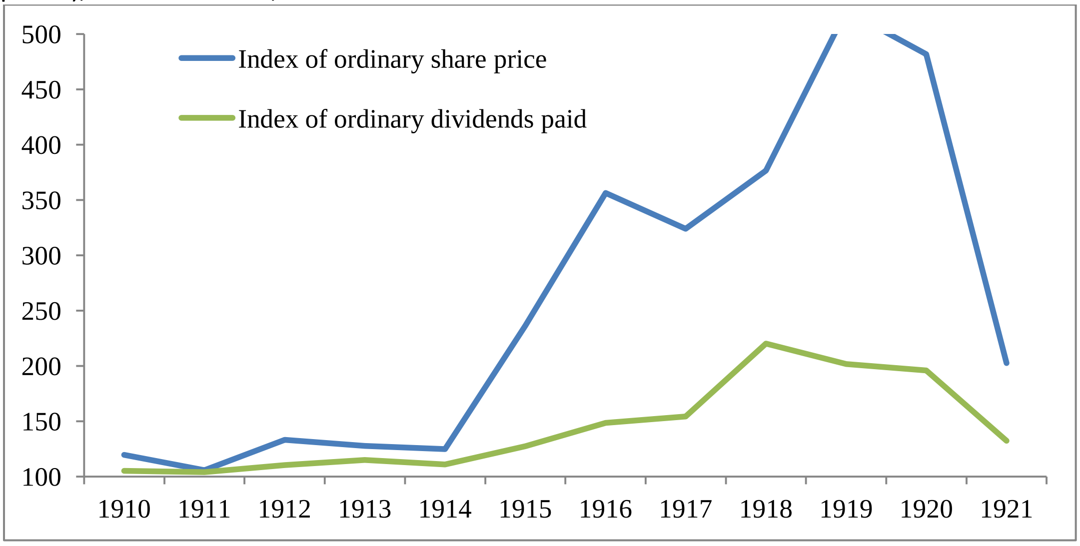
successfully. How did the long term trend in ordinary share prices compare with actual dividend performance? Nominal dividends and share prices are compared in Figures 1.18-1.19 and in Table 1.14. The Figures take the sub-periods 1873-1914 and 1910-21, measured on altogether different scales.

Figure 1.18: End of year share price relative to annual ordinary share dividends, (current prices), index numbers, 1873-1913.



Sources: *Dundee Advertiser*, *IIYB*.

Figure 1.19: End of year share price relative to annual ordinary share dividends, (current prices), index numbers, 1910-1921.



Sources: *Dundee Advertiser*, *IIYB*.

Table 1.14: Industry average ordinary share price relative to dividends (current prices), decadal averages, index numbers, base = 100.

	1873-1913	1870s	1880s	1890s	1900s	1910s
Share price	102	90	85	110	119	259
Dividends	109	112	107	108	108	144

Sources: *Dundee Advertiser*, *IIYB*.

For the sub-period to 1913, the short-term trend in Figure 1.18 demonstrates considerable volatility while the long-term trend indicates that shares underperformed relative to dividends across the industry. There was a negative hangover effect from the volatility and bankruptcies of the crises of 1879-81 and 1884-86 that threatened the long-term prospects of the industry to finance expansion through issuing new equity. This helps to explain the decision of the survivors of the crises to form the IJMA and to adopt short-time working and a freeze on investment until the 1890s. For the whole period 1873-1913, the two indices are closely correlated, share prices registering a score of 108 compared to 102. If this is extended to 1921, the scores diverge sharply, share prices registering 140 compared to 117, reflecting the fact that the mania to acquire jute mill shares to obtain the income or the capital gain deriving from high wartime dividend payouts exceeded the actual level of dividend payment. Thus in the 1910s, the share price index registers 259 compared to 144 for dividends. One feature of the high dividends paid during the war is that this frequently took the form, not of a cash payment, but of a bonus dividend where existing shareholders were issued with new equity. The effect was that the share price would receive a one-off boost before falling again as one share was divided into several shares for the purpose of calculating future share prices. This may well have had the effect of widening the base of share ownership by encouraging new shareholders to enter the market on the basis of an artificially inflated headline share price, giving existing shareholders a strong incentive to realise a short term capital gain by selling their bonus shares. This process took the specific form of a significant transfer of equity from British to Indian shareholders. European jute mill managers and mill assistants received a big increase in performance-related pay during the war, which they invested in jute mill shares seeking capital gains. Edward Benthall, who would become senior partner of Bird & Co, the managing agent with the largest market share in jute mills, wrote in his diary:

> Flotations of every kind were proceeding apace [...] and the share of any flotation jumped to an immediate premium; partners, assistants and friends of the firm who were given allotments were able to sell at a profit and did so without delay[...] The general spirit of the times is illustrated by the head of a technical department who, when engaging a man, said to him, 'Don't worry about the pay, son. You can make far more on the Stock Exchange and any time you like you can walk across [from the managing agents' office] and double your salary.' [...] In the easy days of profit making during the war anything seemed possible.[31]

Uncertainty over India's colonial future on the part of Bengal's settler colonists increased supply, while rising incomes for those Indians engaged in trade or industry in conditions of wartime boom boosted demand.[32]

Conclusion

The evidence for share prices and dividends is in keeping with the preceding discussion relating to profitability and depreciation. The speculative character of much investment in the management of jute mill companies in the 1870s and 1880s led many firms to pay unsustainably high dividends while failing to invest in creating or maintaining a fixed capital stock that could permit firms to compete at the average level of industry efficiency. A prolonged hangover ensued as a number of firms listed on the Calcutta stock exchange languished near bankruptcy or were eventually taken over by more efficient entrants to the industry as it consolidated in the crisis conditions of the 1880s before a renewed wave of investment was embarked on in the 1890s and investor confidence was restored.

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[31] Godfrey Harrison, *Bird and Company of Calcutta, 1864-1964* (Calcutta, 1964), pp. 133-4.

[32] Goswami, "Then came the Marwaris: Some aspects of the changes in the pattern of industrial control in Eastern India", *IESHR*, September 1985, 22.3, pp. 231-2.

The impressive evidence of rapid growth, coupled with very high wartime profits and returns to investors in the form of dividends and capital gains, do not provide a good indicator of the industry's long-term performance. In the period 1870-1913, growth was extensive on the basis of static technology, although there is some evidence of improved productivity at the margin. While there was reduced volatility in the industry's performance from the 1890s, the long-term trend was to declining profitability and dividends in real terms. The effects of rapid growth were to increase competition for the raw material, the dominant element in the industry's cost structure, which increased 50% in price in real terms. The managing agents in the industry, taken as a whole, succeeded in protecting their income despite these disadvantages. The following chapter examines how successful different managing agents were in achieving profitability and growth for the jute mill companies they managed.

Chapter 2. Variations in the Performance of Jute Mill Companies and their Managing Agencies to 1921.

The preceding discussion of the industry's performance suggested that the industry was successful at overcoming the volatility experienced during the depression years and that it experienced a more stable period of growth through cooperation between firms and managing agents under the auspices of the Indian Jute Manufacturers Association from the late 1880s onwards. However, the impression of generalised growth and prosperity should not obscure significant differences in performance between firms and managing agents. The variation in performance is worthy of exploration because it permits a more differentiated and nuanced analysis of the different strategies and motivations of different actors within the industry. Strategic and operational decision-making in the industry occurred at the level of the managing agency, with outside directors on the boards of the managed mill companies playing a passive role. Therefore, the managing agent is taken as the basic unit of analysis for exploring variations in performance. All the data in this chapter take a weighted average of the performance of the mill companies under the control of each managing agent.

In analysing these questions in the course of this chapter, the focus, as with the previous chapter, remains largely on the quantitative data provided by individual firms' half-yearly accounts, cross-referenced with industry-level data from Government of India and IJMA sources, and supplemented by qualitative data from newspaper sources, company histories and some journalistic monographs. The motivations of actors making decisions about firm behaviour generally have to be inferred externally from results. In this sense, the firm, whether the jute mill company or the managing agents, remains a 'black box'.

Market Entry and Firm Growth

It was established in the previous chapter that the industry's growth was rapid from during the 1870s up to the crisis at the end of the decade, then slowed in the following decade, before accelerating throughout the 1890s and 1900s, then stagnated during the 1910-11 recession and the years of the war. The growth of loom capacity was mirrored by changes in other variables such as capital and labour employed. How was this growth distributed between firms and what does this tell us about the nature of barriers to entry?

Table 2.1 shows changes in the market share of the managing agents, measured by productive capacity, or looms, and the year in which the agents entered the industry, taken in descending order by market share in at the end of the period. (The tables presented throughout this chapter present the ordering of managing agents according to market share, as in the table below, unless stated).

Table 2.1: Managing agents, year of entering industry, and market share by loom capacity, decadal averages, in descending order by share, 1910-19.

Managing Agent ("£" denotes Sterling companies to 1914)	Year of entry	1870s	1880s	1890s	1900s	1910s
Bird	1881		5.3%	3.8%	10.8%	14.9%
Thomas Duff £	*1881	5.4%	8.3%	12.7%	11.5%	10.8%
Andrew Yule	1874	7.9%	5.6%	10.9%	16.7%	9.4%
Jardine Skinner	1864	3.7%	5.9%	7.2%	6.7%	7.8%
Ernsthausen	1874	6.6%	5.5%	5.4%	3.9%	6.7%
Geo. Henderson £	1858	19.5%	10.1%	7.8%	5.4%	5.4%
Kettlewell Bullen	1880	8.5%	3.8%	3.5%	3.5%	4.8%
Duncan Bros £	1896			2.2%	2.8%	5.3%
FW Heilgers	1899				2.9%	3.9%
Begg Dunlop	1895			2.0%	3.0%	3.6%
Anderson Wright	1895			2.0%	3.0%	3.6%
McLeod	1907				1.0%	2.6%
Barry	*1877	8.0%	4.2%	3.8%	4.6%	3.3%
Macneill £	1875	4.3%	5.4%	4.2%	2.5%	3.2%
Finlay Muir/James Finlay £	1874	9.2%	8.9%	6.3%	3.3%	2.5%
Birkmyre	1875	4.0%	6.1%	4.9%	2.6%	2.4%
Mackinnon Mackenzie £	1868	7.6%	4.4%	2.9%	2.3%	2.7%
Bemis $	1913					1.6%
Gillanders Arbuthnot	1883		4.0%	7.8%	5.4%	2.5%
Apcar	1872	4.8%	4.0%	4.5%	3.7%	

*Schoene Kilburn & Co acted from 1874-1880 as agents for the Dundee directors of Samnuggur Co. who then constituted themselves as Thomas Duff & Co, in 1881. Jardine Skinner acted as agents for the Barrys, the London directors of the Gourepore mill from 1864-1877, when the Barrys constituted themselves as a Calcutta agency.

Sources: See Figure 1.2.

Note. The tables presented throughout this chapter present the ordering of managing agents according to market share in 1910-19, as in the table above, unless stated. Percentages shown may not sum to 100% due to patterns of entry and exit at the margin of some of the more shortlived mill companies, and because accounts data are unavailable for the privately owned Hastings mill of Birkmyres.

The information about trends in the share of productive capacity measured by looms as a proxy for market share suggests a few general observations. Those managing agents who initially entered the market in the 1860s and 1870s did not tend to maintain or increase their market share, (Hendersons and James Finlay, managers respectively of the Barnagore and Champdany mills are notable for their declining market share). These were mostly established trading firms with offices in London, Glasgow and Calcutta. The three leading firms in the industry in 1919 – Bird, Andrew Yule and Thomas Duff[1] – were all relatively new managing agencies whose main locus of operations was Calcutta. Bird and Yule's position as substantial jute mill agents was mirrored by their rise to prominence in other high growth industrial sectors of the Bengal economy, notably tea and coal, while Thomas Duff remained specialised in jute. Yule and Duff expanded most aggressively in the 1890s at the end of the Long Depression, then maintained their market share. Bird followed in the 1900s. As the growth of the industry slowed in the war decade, growth was much more evenly distributed across all firms. A number of new firms entered the industry from the 1890s but their entry was too belated to challenge the position of the leading firms.

Table 2.2: Relative scales of ownership and productive units.

Year	Agents	Companies managed per agent	*Mills managed per agent	Mills per company	Looms per mill	Looms per company	Looms per agent	Spindles per loom
1880	19	1.0	1.2	1.2	225	260	260	14.3
1890	16	1.4	1.6	1.2	296	350	482	20.4
1900	19	1.5	1.8	1.2	415	487	743	20.9
1910	20	2.0	3.0	1.5	524	785	1571	20.6
1920	25	2.2	3.0	1.4	540	733	1642	20.9

Sources: *Statistics of British India, Vol 1, Commercial Statistics*, "Progress of the jute mill industry in India"; number of agents from *Jute Mills in Bengal*, *Dundee Advertiser*, *IIYB*.

Companies sometimes encompassed more than one mill, sometimes situated adjacent to each other on the same site or sometimes on different sites, and is taken as an indicator of the technical scale of the productive unit.

Table 2.2 above indicates that the industry became steadily more centralised and concentrated in terms of management, ownership and the scale of the productive unit. At the same time, both the impulse to centralisation through mergers and acquisitions and the tendency for new agents to enter the industry were relatively weaker than the tendency towards concentration until the very end of the period. Most of the growth that took place

[1] Throughout this chapter, references are to the firm rather than the founding partner the firm was named after.

occurred in one of three ways – by existing companies extending existing mills, by existing companies investing in additional mills, or by existing agents floating new companies.

Table 2.3: Managing agents' share of productive capacity, 1919, in descending order.

Agents	Total looms	Managed Companies	Looms per company	Mills	Looms per mill*
Bird	5906	8	738	10	591
Thomas Duff £	4343	3	1448	7	620
Andrew Yule	4062	8	508	9	451
Jardine Skinner	3231	2	1616	4	808
Geo. Henderson £	2910	2	1455	4	728
Ernsthausen	2663	2	1332	5	533
Kettlewell Bullen	2250	2	1125	4	563
Duncan Bros & Co £	2000	1	2000	4	500
FW Heilgers	1661	2	831	2	831
Anderson Wright	1370	1	1370	2	685
Macneill £	1294	1	1294	2	647
Begg Dunlop	1257	2	629	3	419
Barry	1255	1	1255	2	628
McLeod	1175	3	392	3	392
Finlay Muir £	1071	1	1071	2	536
Birkmyre (private)	1052	1	1052	2	526
Mackinnon Mackenzie £	1033	1	1033	3	344
Gillanders Arbuthnot	808	2	404	2	404
Bemis $	660	1	660	1	660
Average, Rupee+	**2331**	**3.0**	**927**	**4.2**	**573**
Average, Sterling+	**2109**	**1.5**	**1384**	**3.7**	**563**
Average	**2105**	**2.3**	**1064**	**3.7**	**572**

Sources: *Statistics of British India, Vol 1, Commercial Statistics*, "Progress of the jute mill industry in India"; number of agents from *Jute Mills in Bengal*, *Dundee Advertiser*, *IIYB*.

*This is a measure of the scale of production units within a mill company. Most companies encompassed more than one mill, and expanded through adding larger mills over time as well as adding capacity to existing mill companies.

+Birkmyre, which managed the Hastings mill, and Bemis, which managed the Angus mill, are excluded from the respective averages for managing agencies running Rupee and Sterling mill companies.

Table 2.3 reveals a wide variation in the scale of looms employed within a mill and of the looms employed by a single company. For example, Bird & Co had managing agency rights controlling eight jute mill companies, which encompassed 10 mills, (i.e. two of their companies had two mills and the rest one). As shown in the previous table, the scale of the average productive unit increased two and a half times from 225 looms to 540 looms between 1880 and 1920. This suggests that firms were able to benefit from economies of scale in the arrangement of mill machinery and in the employment of more efficient engines over time. However, the variation between firms in 1919 is indicative of the way that increases in scale were adopted piecemeal as and when firms found it opportune to raise the funds required for investment in fixed capital, rather than any fundamental change in techniques leading to newer mills being constructed on a larger scale than previously. Indeed, many of the smaller mills were those of more recent construction. Taking the size of the mill unit as an indicator of scale is a somewhat arbitrary classification in any case. It does not strictly correlate with engine power as mills within the same company were frequently located adjacent to each other on the same site and might share sources of power. Moreover, the division of labour was not necessarily a discrete process from mill to mill; adjacent mills might permit the use of differing ratios of sacking and hessian looms to be employed in different mills being supplied with different grades of raw jute from the same source on site. On the other hand, some mill companies comprised mills located on different sites which did operate as discrete units. The Champdany Co comprised Champdany and Wellington mills some twenty miles apart; Bird's Union Mill Co. and Henderson's Barnagore Co. similarly operated across more than one geographical site.

The data for the number of looms employed by individual companies under the control of different managing agents in 1919 suggest that the growth of the different agents' interest in the industry could be accomplished by different means. Expansion was achieved either by existing firms issuing new equity or by managing agents floating new companies. While the average number of looms employed per company in 1919 was 1064, 12 agents employed more than the average while 6 employed less, with a high degree of variation and of clustering either above or below the average. While data identifying shareholders and the number of shares held is scarce, the qualitative data seems to confirm the hypothesis that those agents which grew through issuing new equity in existing companies were more internationalised at the beginning of the period in terms of their operations and had a UK head office which either gave a strategic lead or had parity with its Calcutta branch.[2] They would have had substantial numbers of major shareholders who were UK residents, whether the shares were denominated in sterling or rupees. All of the Sterling companies expanded by this route.[3] On the other hand, two of the leading firms, Bird and Yule, whose diverse operations were focused geographically in Bengal, (and in India more generally), tended to float more new companies in order to expand. Their reputation as leading Indian firms gave them an advantage in entering Indian capital markets to raise equity from a more ethnically and socially diverse range of investors than their competitors while retaining control through am inner circle of loyal major shareholders. At the same time, the agents themselves could charge lucrative fees to the floated companies for underwriting new issues of shares and debentures. The costs of floating a new jute mill company were widely reported to be substantially higher in the UK than in Calcutta, while Calcutta managing agents could charge commissions on promoting new companies, a specialist activity in London.[4]

A less common route for managing agents to expand which has not been discussed so far was through the acquisition of bankrupt or struggling mill companies to form a new company or through the transfer of the agency rights in a company where the existing agents had lost the confidence of the shareholders, as shown in Table 2.4 below:

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[2] Barry & Co, managing agents of the Gourepore mill were an example of a managing agency controlling a rupee mill company where the senior partner resided in London; Champdany Co, MOTD, 19 May 1885. Ernsthausen was another; *Thacker's Directory*, various years. The reasons are conceptualised in Casson, 'Institutional diversity in overseas enterprise; explaining the free-standing company', *Business History*, 36.4, pp. 95–108, 1994.

[3] MS UGD 91/7, Champdany Co; J. Forbes Munro, *Maritime Enterprise; Sir William Mackinnon and his Business Network* (Woodbridge, Suffolk, 2003); TB Nimmo, *The Duncan Group; being a short history of Duncan Brothers & Co. Ltd., Calcutta, and Walter Duncan & Goodricke Ltd., London, 1859-1959* (London, 1959), p9, pp28-29

[4] R.C. Michie, *Money, Mania and Markets: Investment, Company Formation and the Stock Exchange in Nineteenth-Century Scotland* (Edinburgh, 1981); Bagchi, *Private Investment in India*, p. 270.

Table 2.4 - Acquisition or transfer of agency rights of bankrupt or poorly performing mills:

Year	Acquired by	Mill Company	Former company (if name changed)	Transfer of agency from	Reason
1872	Borrodaile Schiller	Calcutta	Rishra	Acland	Debt
1872	Henderson	Barnagore		Borneo Co	Reconstructed
1877	Gillanders	Balliaghatta	Bengal Jute	Schoene Kilburn	Bankruptcy
1877	McIntosh	Calcutta		Borrodaile Schiller	Poor results
1877	JB Barry	Gourepore		Jardine Skinner	Agency transfer
1879	Kettlewell Bullen	Fort Gloster		Macallister	Bankruptcy
1879	Henry S Cox	Oriental		Macallister	Bankruptcy
1880	Bird	Union	Oriental	Henry S Cox	Bankruptcy
1880	Reinhold	Goosery	Rustomjee	Rustomjee	Bankruptcy
1881	Thomas Duff	Samnuggur		Schoene Kilburn	Agency transfer
1881	James Finlay	Champdany (Wellington)	Calcutta	McIntosh	Bankruptcy
1881	Henderson	Barnagore	Balliaghatta	Robinson, Morrison	Bankruptcy
1888	Thomas Duff	Victoria		Victoria Co directors	Poor results
1890	Andrew Yule	Central	Goosery	Reinhold	Bankruptcy
1895	Kettlewell Bullen	Fort Gloster	Gordon	Gordon Stewart	Bankruptcy
1899	Andrew Yule	Delta	Serajgunge	Hoare Miller	Natural disaster
1900	Bird	Clive		Gladstone Wyllie	Poor results
1904	Bird	Lansdowne	Arathoon	Arathoon	Poor results
1907	McLeod	Soorah		Ram Prashad	Poor results
1909	Begg Dunlop	Alexandra		M Sarkies	Poor results
1911	Kettlewell Bullen	Fort William	Seebpore	Apcar	Bankruptcy
1912	Bird	Union	Lower (Hooghly)	Gillanders Arbuthnot	Poor results
1912	Duncan	Anglo-India	Gordon (Ft	Kettlewell Bullen	Bankruptcy
1918	Henderson	Bally	(Barnagore)	N/a	Reconstructed

Sources: *Jute Mills in Bengal, The Friend of India and Statesman, Dundee Advertiser, Dundee Courier, IIYB*.

Table 2.4 presents a comprehensive list of cases of bankruptcy and of transfers of agency control from the birth of the industry up to 1921. It excludes cases where firms restructured their equity but continued under the management of the same agency, which became a frequent occurrence in the period 1914-19 when all the Sterling companies except those managed by Duff were refloated as rupee companies to reduce their tax liabilities and to take advantage of the boom in jute share listings in Calcutta. Of the ten cases in which mill companies entered into liquidation, seven were concentrated in the period 1877-81 with the bursting of the first bubble in jute mill shares. With the consolidation of the industry under the auspices of the IJMA, centralisation occurred through more efficient companies taking over less efficient companies. Sometimes, this involved the acquisition of old mills which were refloated as new companies - as in the cases of Seebpore-Fort William, Arathoon-Lansdowne – or the incorporation of a branch mill into an existing company – as with Lower Hooghly-Union, Gordon-Fort Gloster (later sold to Anglo-India). More frequently, there was a transfer of the managing agency to a new firm of agents to restore shareholder confidence in the mill company's future profitability. In a minority of cases, the mill company's directors constituted their own agency and displaced the original agents - after a period of profitable working had established the mill's viability - in order to capture the agency rents. The most striking observation to be made of the information presented in the table is that it demonstrates the frequency with which Andrew Yule and Bird used acquisitions as a method of expanding market share, which seems logically consistent with their being relatively more active than other firms in floating new companies. Both reveal a facility for operating in the Calcutta stock market and the possession of an associated cluster of competencies – an established reputation with shareholders, access to finance, underwriting and legal services, etc. Moreover, these competencies seem to have been perceived by investors to outweigh the real disadvantages associated with the acquisition of failed or failing mills – their small scale, accumulated debts, their antiquated capital or the inefficient arrangement of machinery and buildings requiring considerable investment. On the other hand, Thomas Duff & Co. preferred to expand by investing in new plant. Their reasons for acquiring the Victoria Mill Company agency had more to do with eliminating competition in the Dundee capital market for jute mill investment in Calcutta.

The table also draws attention to the number of agents forced to exit the industry. Those agents who lost their agency from 1877-81 exited the industry permanently and the decline in their fortunes in jute tended to mirror their eclipse generally in the mercantile world of Calcutta, (although the Kilburn element of the Schoene-Kilburn partnership enjoyed later success in coal.) A feature of those exiting the industry runs somewhat counter to the accepted wisdom in the historiography that Indian proprietors only became active in manufacturing in the inter-war years after diversifying from a focus on raw jute dealing, baling and pressing operations.[5] In fact, the shortlived Rustomjee twine mill in the 1880s was an earlier instance. Ram Prasad's Soorah mill represented a pioneering - though small scale - examples of Indian ownership from 1892 until its acquisition by the McLeod agency in 1907.[6] Also notable is the eclipse of an intermediary layer in the racial hierarchy of the Calcutta mercantile community, all three firms representing the Armenian diaspora exited the industry between 1904 and 1911 – the Arathoon mill, Sarkies' Alexandra mill, and Apcar's Seebpore mill.[7]

In the period 1912-18, jute manufacturing had become the exclusive preserve of European "settler colonial" capital but this would prove to be the apogee of its power and influence. The accumulated capital in a rapidly growing industry had become markedly more concentrated and somewhat more centralised over time. The pattern of entry and exit to the industry suggests that there were some barriers to entry and that these became more significant over time. The mania for jute mill shares of the 1870s had permitted fraudulent operators such as the former American bus conductor Macallister to embezzle a sizable fortune.[8] The crisis of 1877-81 brought this period decisively to a close. Those managing agents which entered the industry from the 1880s tended to be European firms of good repute who enjoyed success in entering other high growth sectors such as raw jute pressing and baling, coal and tea, and services such as shipping and insurance – and in diversifying out of declining sectors such as opium and indigo (Jardine Skinner, Begg Dunlop respectively). Crucially, their diverse portfolios and links to the Bank of Bengal and the City of London gave them the collateral and

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[5] Goswami, "Then came the Marwaris" *IESHR*, September 1985, 22.3.

[6] 'Calcutta Jute Market', *Dundee Courier*, 25 Oct 1894, p. 7.

[7] Amiya Bagchi, *The Evolution of the State Bank of India, vol. II; the Era of the Presidency Banks, 1876-1920* (London, 1997), pp. 89-91; India Office Records, MSS Eur F308, GH Sutherland, Begg Dunlop & Co, correspondence and accounts, letter from Charles W Tosh, Calcutta manager, to GH Sutherland, 24 Jun 1909.

[8] Anon., *Jute Mills in Bengal*, pp. 28-33.

creditworthiness to finance the increasing scale of investments in fixed and working capital required by the evolution of the industry.

There was also variation in the speed at which more profitable hessian looms were introduced, as shown in the table below.

Table 2.5: Hessian looms, proportion of total productive capacity, decadal average.

Managing agents	**Rank**	**1870-1913**	**1870s**	**1880s**	**1890s**	**1900s**	**1910s**
Bird	3	44%		21%	29%	52%	59%
Thomas Duff £	4	44%	27%	16%	41%	61%	66%
Andrew Yule	12	32%	25%	24%	18%	36%	40%
Jardine Skinner	8	41%		28%	34%	55%	68%
Ernsthausen	1	48%	49%	44%	39%	54%	65%
Geo. Henderson £	5	43%	39%	37%	40%	50%	46%
Kettlewell Bullen	14	19%	4%	4%	24%	30%	50%
Duncan Bros & Co £						63%	62%
FW Heilgers						46%	49%
Begg Dunlop						70%	70%
Anderson Wright						55%	62%
McLeod						19%	35%
Barry	11	36%	2%	18%	35%	73%	74%
Macneill £	10	36%	15%	23%	37%	51%	51%
Finlay Muir £	6	42%	31%	29%	46%	51%	59%
Birkmyre (private)	7	41%	11%	39%	42%	50%	51%
Mackinnon Mackenzie £	13	28%	1%	13%	19%	49%	65%
Gillanders Arbuthnot	9	37%		26%	41%	45%	50%
Apcar	2	46%	45%	37%	36%	64%	
Industry average		**41%**	**24%**	**27%**	**33%**	**52%**	**58%**
St dev as % of average		**20%**	**72%**	**40%**	**26%**	**25%**	**19%**

Sources: Figures for individual firms 1870-95 from company annual reports published in *Friend of India & Statesman*, 1879-83, *Dundee Courier* and *Dundee Advertiser*, 1879-95; annual series 'Jute Mills in India' giving breakdown of sacking and hessian looms published by Calcutta firms of jute brokers, Poppe, Delius & Co 1895-99, continued by JA Dykes & Co 1900-09, Moran & Co, 1910-21, reproduced in *Dundee Advertiser*, 1895-1905, Indian Jute Mills Association, Annual *Report of the Committee,* 1905-19.

For those agents that invested in new capacity, the table indicates a long term trend for hessians looms employed to converge at around two hessian looms to each sacking loom, which appears to have been a technical limit imposed by the exigencies of efficiently processing assortments of different qualities of raw material, as discussed in the previous chapter. The standard deviation to measure the variation between managing agents decreased over time, converging on the industry average. The Barnagore mill managed by Hendersons expanded slowly, which explains its low average. A notable exception to this trend was Andrew

Yule, which only employed 40% of its looms on hessian production despite growing rapidly. This proved a boon during the war years when sacking demand surged and Andrew Yule's mills achieved higher profitability than any other group of managing agents. It is not clear why they were reluctant to adopt hessians. The ranking of managing agents by the long-term average proportion of hessian looms does not appear to be closely correlated to relative performance in terms of profitability. The decadal averages for individual managing agents show no clear trend in terms of a group of managing agents enjoying a clear advantage in hessian looms over time. Different agents employed more or less hessian looms than the decadal industry averages in different decades. This suggest that the ability to take advantage of the greater long-term profitability of hessians relative to sacking can only be part of an explanation of the variation in managing agents' performance. Marketing and information advantages in catering to different markets with different types of output – with rapid change and the emergence of new markets over time - may have been just as important.

The cost structures of managing agents in the jute industry

In the previous chapter, several trends were detected regarding costs and sales over time within the industry. The value of output was highly correlated to fluctuations in the cost of raw jute. The long term trend was of a rise in the price of raw jute in real terms from approximately 100 rupees per ton to 175 rupees per ton in the period 1877-1920. Conversely, competition eroded the real terms prices obtained for sacking and hessian outputs, putting pressure on profit margins. Some improvement in productivity was observed, measured in terms of hourly input and output per loom. The weight of raw jute consumed per loom declined relative to output per loom, reflecting reduced wastage and the shift to less bulky hessian production. Volumes of sacking output per loom increased marginally over time while hessian output per loom increased markedly as new capacity was introduced in the 1890s. In this chapter, variations between firms are considered. How successful were different firms in minimising costs while marketing their output at profitable prices?

Table 2.6: Mills, costs per loom, sales per loom, profits per loom – average Rs/ standard deviation as % of annual average, (Rs, constant prices, 1873 = 1).

Mills	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	Average 1879-88
Costs, average	3385	3245	4622	4111	4054	3285	3175	3073	3542	3871	3780
Sales, average	3534	3450	5333	5138	4907	3258	3123	3083	4204	5711	4318
Profits, average	149	205	711	1027	853	-27	-52	10	663	1840	538
Costs, st dev as % of average	18%	18%	15%	26%	12%	18%	23%	17%	17%	31%	19%
Sales, st dev as % of average	18%	11%	18%	19%	17%	23%	26%	20%	15%	15%	18%
Profits, st dev as % of average	204%	156%	43%	89%	61%	1248 %	323%	1872 %	36%	51%	94%

Sources: *Jute Mills in Bengal*, half-yearly reports in *Friend of India and Statesman*, *Dundee Advertiser*.

Given the dominance of raw jute costs in the cost structure of jute manufacturing, the variation in costs between firms and over time for each firm may be explained by their relative aptitude for judging movements in the raw jute market at a time of increasing demand with the entry of new firms. The variation over time for the value of output indicates the trend of falling output prices caused by increasing competition and depressed trading conditions until the trade picked up in 1888. Those firms which succeeded in marketing a greater proportion of their output at the margin in growing export markets for woolpacks and cornsacks in Australasia and hessian wheatbags in California, rather than rely on more local demand, were better cushioned from the impact of these negative trading conditions.[9]

[9] Conceptually, it is difficult to evaluate whether the amount of variation observed between firms in a given year or for an individual firm over time was "small" or "large". Taken together, the variation between firms in given years was sufficient to produce substantial differences in profitability. The average of the standard deviation between firms relative to the average in each year for the whole period 1879-1888 was 19% for costs and 18% for sales income. The standard deviations measured as a percentage of the decadal average 1879-1888 were less marked, at 14% for costs and 9% for output. The latter figures may give a more reliable measure of dispersion as decadal averages smooth some of the variation produced in the annual figures, which is simply an artefact of the introduction of new looms or of differences in the start and end points of accounting years. The per loom measures are all

The difficulty of constructing quantitative data series for individual firms' costs and sales in order to interpret variation between firms can be surmounted in a number of ways. Quantitative data for a smaller sample of firms over a longer time period can also be examined and taken as indicative of the wider variation between firms. More specifically, the disaggregated data that exists for individual firms' cost structures can be analysed. Qualitative data from company records and newspapers can also be examined. Finally, the more detailed data available on the profit and loss account for the outcomes achieved by individual firms can be taken as sufficient indication of the existence of variation in performance in controlling costs and marketing output. The analysis then shifts to focus on different strategies pursued by firms in order to improve or maintain profitability.

Figures 2.1 and 2.2 below calculate costs and output value per loom for the period 1890-1921 using accounts data that have survived for seven companies, managed by four managing agents.[10] The managing agents are a representative sample of the range of performance discussed in relation to other indicators below. The figures show the volatility over time of costs and sales. The trend over time is similar across firms but small variations could lead to significant variation in profitability.

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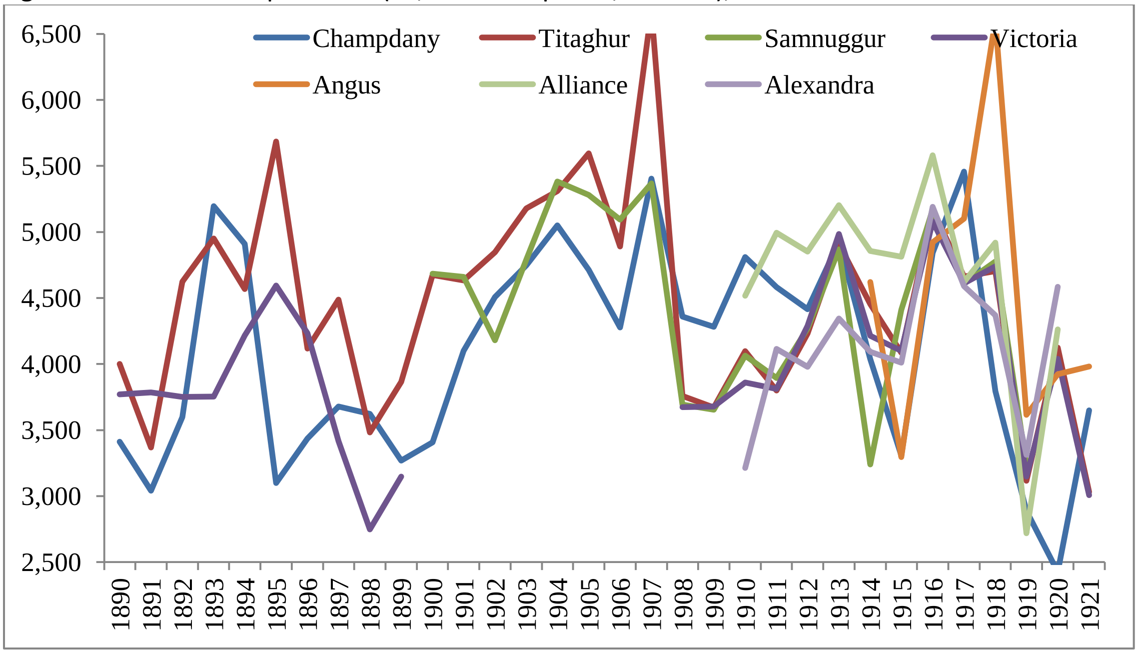
based on looms working at the beginning of the year, which introduces some imprecision in measuring the actual average of looms working throughout the year when new capacity was introduced.

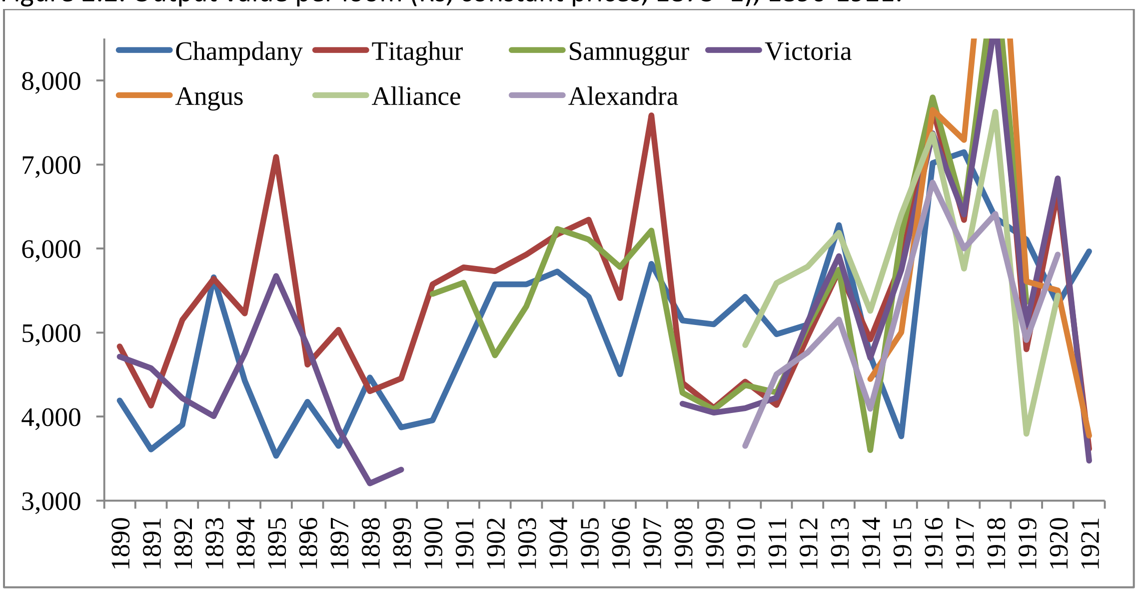
[10] These series are not afflicted by the same issues of missing data recorded for 1879-1888. Data for the series for Alexandra and Alliance are available only from 1910; Angus commenced work in 1914.

Figure 2.1. Total costs per loom (Rs, constant prices, 1873=1), 1890-1921:



British Library, India Office Records, MSS Eur F308, GH Sutherland, Begg Dunlop correspondence & accounts for Alliance and Alexandra Cos; Glasgow University Archive, MSS UGD 91/7/1/2/1/1-2, Champdany Co, General Meeting Minutes, MSS UGD 91/7/1/5/1-3, Champdany Co, Annual Reports and Accounts, MSS UGD 91/7/3/1/2, Champdany Co, Balance Sheets and Profit and Loss Accounts; UDA MS 86/1/5/5, Samnuggur Co, Directors' reports and accounts; MS 86/2/5/5, Victoria Co, Directors' reports and accounts; MS 86/3/5/1-5, Titaghur Co, Half-yearly balance sheets, Reports of the directors, balance sheet, working account and profit and loss account; MS 86/4/5/1/1-9, Angus Co, Directors reports and accounts 1913-;

Figure 2.2. Output value per loom (Rs, constant prices, 1873=1), 1890-1921:



Sources: As for Figure 2.1 above.

Table 2.7. Total costs per loom (constant rupees 1873=1), 1890-1921, and decadal averages:

	1890s	1900s	1910s	1890-1921
Champdany	3,726	4,484	4,306	4,101
Titaghur	4,315	4,923	4,323	4,461
Samnuggur		4,679	4,254	4,403
Victoria	3,742	3,676	4,284	3,944
Angus			4,693	4,507
Alliance			4,707	4,667
Alexandra			4,122	4,164
Average	3,928	4,684	4,366	4,282
Average of St dev as % of average for years	14%	9%	10%	11%

Sources: As for Figure 2.1 above.

Table 2.8. Output value per loom (constant rupees 1873=1), 1890-1921, and decadal averages:

	1890s	1900s	1910s	1890-1921
Champdany	4,149	5,158	5,690	5,040
Titaghur	5,048	5,702	5,785	5,489
Samnuggur		5,379	5,816	5,507
Victoria	4,320	4,101	5,737	4,962
Angus			6,848	6,295
Alliance			5,862	5,823
Alexandra			5,171	5,240
Average	4,506	5,392	5,739	5,201
Average of St dev as % of average for years	15%	10%	12%	13%

Sources: As for Figure 2.1 above.

The firm trends in Figures 2.1 and 2.2 are strikingly similar. Given the dominance of the price of the raw material in the cost structure, the trajectory follows that of the price of the raw material until the war and dominates any variation caused by other factors. The two measures of standard deviation relative to the average during the period 1890-21 of 11% for costs and 13% for sales income given in Tables 2.7 and 2.8 suggest a slight decline in variation across the sampled firms relative to that shown in Table 2.6 for the firms sampled in 1879-1888. Samnuggur, Titaghur, Victoria and Angus mills were among the most profitable mills during the period 1890-1921. Alliance performed around the average. Champdany and Alexandra were two of the least profitable although both improved their performance during the last of the three decades. If, from this, the sample can be taken to be roughly representative, the hypothesis advanced in the previous chapter that the formation of the Indian Jute Mills

Association stabilised the industry around a regime that mitigated competitive pressures cannot be discounted. The role of the IJMA is explored in more detail in Chapter 4.

Jute Stocks and Strategy.

As discussed in chapter 3, the jute mill companies developed a strategy of purchasing large jute stocks over time in order to control costs and reduce the risk of fluctuations in the price of the raw material. The table below shows the level of stocks held by individual firms who reported their accounts at the end of June and December.

Table 2.9: Managing agents, value of jute stocks per loom in constant rupees at June 30th and December 31st

June 30th					**Managing agents**	**December 31st**				
1880-1919	1880s	1890s	1900s	1910s		1880-1919	1880s	1890s	1900s	1910s
979	419	1267	1080	1076	Bird	1628	950	1972	1815	1789
1063		1070	1085	1037	Thomas Duff	1804	774	1892	2422	1756
878		742	748	1091	Andrew Yule	1228		1244	1047	1591
746	690	749	687	849	Jardine Skinner	1420	925	1353	1680	1883
797	428	936	833	975	Ernsthausen	1372	941	1558	1650	1748
				812	FW Heilgers					1595
1014				880	Begg Dunlop					1832
1119			1136	872	Anderson Wright				2571	2201
				993	McLeod				1597	1597
766	527	830	901	838	Barry	1556	1181	1530	1965	1755
909	515	1099	1168	1083	Finlay Muir	1553			1465	1579
					Bemis					3149
695	367	918	792	584	Gillanders Arbuthnot	1423	1091	1897	1451	916
849	374	968	1215		Apcar	1535	856	1705	2230	
820	**486**	**952**	**907**	**970**	**Weighted Average**	**1503**	**960**	**1647**	**1892**	**1812**
31%	**35%**	**33%**	**34%**	**27%**	**Standard dev as % of average**	**29%**	**33%**	**30%**	**35%**	**31%**

Sources: Individual mill company half-yearly reports to 1913 reported in *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *Investors India Year Book*, 1913-21. Some values from regular half-yearly series in *Capital* (Calcutta), "Local Jute Mill Stocks".

The end of June represented a point in the year when firms required sufficient stocks to carry them over to the beginning of the following jute season, commencing in August. The end of December represented the culmination of the busy period from October to December, when the bulk of jute supplies came on to the market and represented the high point at which jute stocks were accumulated. From January, the quality and quantity of jute available in the market became unreliable. Changes in the industry average over time reveal a marked shift from the 1880s to the 1890s, when firms moved away from a reliance on open market operations in the Calcutta bazaar throughout the year. Instead, the mill companies developed networked relationships with raw jute dealers in the mofussil to concentrate their purchases. From the 1890s to the 1900s, the industry average increased slightly, then fell again during the war decade.

In terms of the variation between firms, it seems that most firms deployed a similar strategy. The standard deviation from the decadal average measured as a percentage of the average was relatively stable from decade to decade, in a range from 21%-29% in June, and from 17-28% in December. Some of this variation may be explained by differential access to working capital finance. For example, the mills managed by Thomas Duff & Co held stocks considerably below the December average in the 1880s, and considerably above the December average in the 1910s. In the 1880s, as a small managing agent specialising in jute, they had limited financial reserves for working capital as they pursued the rapid expansion of productive capacity with the addition of Titaghur mill, 70% of the equity of which took the form of bonus shares.[11] Thomas Duff & Co took out bank loans to finance their working capital requirements, which were secured personally against the signatures of the directors. Joseph Barrie, one of the directors, also lent £10,000 at 5% interest to each of the Samnuggur and Titaghur mill companies. Thomas Duff also lent large sums.[12] There were also considerable risks attached to a Sterling company conducting money market operations and arranging cover to finance raw jute purchases with the volatile rupee exchange rate experienced during the 1880s and

[11] UDA, MS 86/1/6/1, Samnuggur Co, Memorandum and Articles of Association, amendment of 27 June 1883, p. 47.

[12] MS 86/1/1/1, Samnuggur Co, MOTD, 4 Feb 1878, p. 116; MS 86/1/1/1, Samnuggur Co, MOTD, 30 Apr 1884, p. 347.

1890s.[13] By the 1910s, the financial position of Thomas Duff & Co had eased and they appear to have pursued a more aggressive strategy to secure larger stocks. On the other hand, mills run by some of the more diversified managing agents could finance their working capital requirements by a process of the agents themselves profitably lending money to their mill companies during the jute season.[14] As Bagchi and Ray have outlined, both the Bank of Bengal interest rate for Europeans, and the bazaar rate for hundis, fluctuated sharply to finance the seasonal requirements of commercial intermediaries in financing the exchange of agricultural commodities for sale in Calcutta or for export, providing arbitrage opportunities for the European managing agents who dominated the boards of the Bank of Bengal and other merchant banks such as the Chartered Bank of India, Australia and China, and the Agra Bank, becoming quasi-banks themselves in the process.[15]

Working capital

The table below estimates decadal averages for working capital for the jute mill companies, aggregated by managing agent. Working capital was presented in individual jute mill company accounts as a measure of the residual after current liabilities were subtracted from liquid assets. Taking the standard deviation was not found to be a meaningful measure of dispersion in this case, relative to an average that tends to zero. The estimates were constructed by calculating the balance of the individual firms' liquid assets, relative to their current liabilities in a given year. As discussed in chapter 1, it is not straightforward to determine what was a desirable level of working capital, given the short-term seasonal requirements of financing purchases of raw jute. The trend over time, as the agents which remained in the industry

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[13] MS 86/1/1/3, Samnuggur Co, MOTD, 30 Apr 1890, p. 163.

[14] See, for instance, criticism of Finlay Muir by Champdany shareholders...

[15] Amiya Bagchi, *The Presidency Banks and the Indian Economy, 1876-1914* (Oxford, 1989); Rajat Kanta Ray, "Asian Capital in the Age of European Domination: the Rise of the Bazaar, 1800-1914"; *Modern Asian Studies* Vol 29.3, pp 449-554.

prospered, was towards accumulating some working capital, although in many cases insufficient to cover the cost of raw jute stocks per loom held at the height of the season.

Table 2.11, estimated working capital per loom (Rs, constant prices, 1873 = 1) of mills under individual managing agents:

Managing agents	**Average 1880-1921**	**Average 1880s**	**Average 1890s**	**Average 1900s**	**Average 1910s**
Bird	682	416	614	469	1736
Thomas Duff	-312	-602	59	364	-900
Andrew Yule	454	377	659	441	1175
Jardine Skinner	475	-652	-1	1417	1752
Ernsthausen	750	420	345	1486	1537
Geo. Henderson	-730	-683	-475	-993	-618
Kettlewell Bullen	920	425	684	1215	1724
Duncan Bros & Co	-469		-1344	-328	254
FW Heilgers	-231			315	117
Begg Dunlop	2107		-580	1740	3378
Anderson Wright	863		-519	512	2630
McLeod	400			395	1133
Barry	867	798	1132	1401	1290
Macneill	-278		36	-301	-479
Finlay Muir	-1457	-1192	-2342	-1285	-936
Birkmyre	-21		-11	-16	-44
Mackinnon Mackenzie	-449	-155	749	217	-1866
Bemis	-394				-327
Gillanders Arbuthnot	64	-206	39	970	-134
Apcar	543	534	-245	1429	

Sources: *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.*

Another feature of the trends over time was the accumulation of working capital during the war decade, which conforms to the large profits earned, leading to an accumulation of reserves while investment opportunities were deferred. George Henderson and Finlay Muir stand out as managing agents which managed mills – Barnagore and Champdany – with persistently negative working capital, which may reflect problems with the valuation and expense of their capital stock, leaving them under-capitalised, and difficulties in raising new equity.

Cost of fixed capital

Table 2.12 measures the real net cost of investment in fixed capital over time. The calculation is made by taking the total amount invested in the "block" after depreciation of the mill companies managed by each managing agent, then dividing by the number of looms. The "block" in the accounts data measured total fixed capital investment in land, buildings, machinery, and transportation equipment.

Table 2.12: Net cost of fixed capital per loom after depreciation, and inclusive of reserve funds, (Rs, constant prices, 1873 = 1).

Agents (£ = Sterling co)	1870-1913	1870s	1880s	1890s	1900s	1910s
Bird	2608		3181	2098	3865	2638
Thomas Duff £	4838		3613	5323	3899	2749
Andrew Yule	2818	2552	2764	3710	2619	1850
Jardine Skinner	3157		3057	2840	3568	2066
Ernsthausen	3396	3500	3682	3366	3710	2998
Geo. Henderson £	4028	5725	4196	3528	4250	2950
Kettlewell Bullen	3476	3911	3996	3438	3023	2309
Duncan Bros & Co £	4156				4357	3264
FW Heilgers	3542				3812	1888
Begg Dunlop	4190				4333	2963
Anderson Wright	3229				2991	2346
McLeod						2937
Barry	2565	3324	2349	2785	2506	1355
Macneill £				5323	4331	
Finlay Muir £	4318	5302	3795	4484	4397	2212
MackinnonMackenzie £				4702	3769	
Gillanders Arbuthnot	4634		3930	5012	4229	3162
Apcar	3647	7737	3236	3108	2780	
Weighted average	**3951**	**5534**	**3548**	**3990**	**3696**	**2425**
St dev as % of average	**17%**	**30%**	**16%**	**26%**	**18%**	**31%**

Sources: *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.* This measure aggregates additions to fixed capital in constant prices in the year the investment was made, then subtracting depreciation funds and reserves.

One feature of the variation between firms is the consistently higher cost of the net fixed capital of the *sterling* companies measured by the long-term averages. This is to be expected as the rupee value of the Sterling companies was inflated by the declining rupee from the 1870s to the 1890s.[16] Only the mills managed by Thomas Duff & Co remained as Sterling companies by 1919, the others having been reconstructed and floated on the Calcutta stock

[16] Conceptually, it makes sense to make the calculation on this basis as this method captures the declining value in *sterling* of remitted profits relative to capital invested over time.

exchange. The other notable feature explaining the variation between firms is that the net cost of fixed capital rose in the short-term with investment in new capacity. Birds, Andrew Yule and Anderson Wright appear to have succeeded at expanding while controlling for the cost of their investment in fixed capital – by acquiring fixed capital cheaply through purchasing the devalued capital of bankrupt firms and by writing off the cost of capital to depreciation funds and reserves more aggressively than other firms. Barry's low capital costs are explained by its more leisurely expansion over a long time period. Thomas Duff & Co's competitive advantage does not appear to have been based on their ability to depreciate their stock of fixed capital more rapidly than competitors.

This chapter has so far examined variation between firms in terms of their cost structure, access to the raw material, combination of the physical factors of production, and the resulting output and sales. In summary, the results described demonstrate a limited degree of variation between firms and managing agents over time that is logically to be expected. Weaker firms went to the wall. Weaker managing agents lost their agency rights to stronger ones. The results are consistent with processes whereby industrial and commercial knowledge was diffused from the market-leading firms that remained in the industry, facilitated by formal cooperation embodied in the IJMA, and by other, more informal processes.

Profitability

The industry trend in profitability discussed in the previous chapter was described as one of superprofits earned by some market-leading firms in the 1870s, a period of crisis in the 1880s, then a stabilisation – coupled with a long run tendency to declining profits caused by competitive pressures - up to the First World War, when superprofits were generalised across the industry. Given that marginal differences in costs and sales between individual firms could lead to bigger variations in profitability, how did individual firms perform relative to each other? The data presented below aggregate jute mill companies by managing agent. Table 2.13

shows the variation in profits per loom which allows differences in the underlying cost of fixed capital to be stripped out of the analysis, and is thus a better measure of productive efficiency. It also strips out the effect of the declining rupee exchange rate on the valuation of profits to be remitted relative to the cost of fixed capital for Sterling companies.

Table 2.13: Gross profit after interest per loom (Rs, constant prices, 1873 = 1), decadal averages.

Managing Agents	**Rank 1880-1913**	**1870-1913**	**1870s**	**1880s**	**1890s**	**1900s**	**1910s**
Bird	3	579		670	615	549	804
Thomas Duff £	1	728	1291	857	640	560	842
Andrew Yule	8	487	449	601	503	391	1234
Jardine Skinner	7	505		703	400	434	933
Ernsthausen	6	526	407	690	477	573	578
Geo. Henderson £	5	531	1131	519	287	480	428
Kettlewell Bullen	9	480	33	442	766	479	724
FW Heilgers	11	437				410	1037
Begg Dunlop	10	465				441	1082
Anderson Wright	2	584				680	885
McLeod	12	332					900
Barry	4	560	496	800	521	444	910
Finlay Muir £	14	262	295	338	82	252	852
Gillanders Arbuthnot	13	323		451	319	295	978
Apcar	12	423		406	480	318	
Weighted Industry Average		**474**	**374**	**574**	**469**	**458**	**617**
St dev as % of average		**24%**	**122%**	**30%**	**40%**	**26%**	**33%**

Sources: *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.*

The second column measures the long term peace-time trend up to 1913. When contrasted with the long term trend to 1919, it gives a clear indication of the large profits made during the war. Thomas Duff & Co were the most profitable managing agents in jute manufacturing to 1913. On average, they earned nearly three times the profits per loom of the worst performing managing agents, Finlay, Muir & Co, which managed the Champdany Co. These two agents were outliers. The decadal averages show that Thomas Duff & Co earned exceptional profits in the 1870s and 1880s but continued to perform well thereafter. Most of the other managing agents' profits per loom cluster close to the average. In terms of variation between the decadal averages for individual agents, the wide dispersion of profitability shows the ability of Henderson's Barnagore mill and Duff's Samnuggur mill to exploit and monopolise information advantages in applying techniques of power loom weaving to Indian conditions, and in their access to lucrative foreign markets. The contrast in their fortunes over time is instructive. Duff maintained their advantage through expansion over time while Henderson's restructuring and floatation of Barnagore as a public limited company at an uneconomic price made windfall profits for the original partners, but saddled its new shareholders with a cost structure from which the company never recovered. It is ironic that the eponymous founder of Thomas Duff & Co was one of these original partners. The decline in the decadal standard deviations relative to the 1880s confirms the hypothesis of a stabilisation of profitability with a relative lack of dispersion around the industry average.

An alternative measure of profitability takes the real return on fixed capital, after accounting for depreciation and reserve funds. The measures of investment in fixed capital and of profits are all taken in constant prices.

Table 2.14: Gross Profit after interest - "real" % return on gross block after depreciation incl reserves – decadal averages (Rs, constant prices, 1873 = 1).

Managing Agents	Rank 1880-1913	1880-1913+	1870s	1880s	1890s	1900s	1910s+
Bird	1	33%		50%	47%	14%	45%
Thomas Duff £	3	26%	17%	57%	12%	14%	32%
Andrew Yule	4	20%	20%	29%	17%	16%	113%
Jardine Skinner	7	13%		13%	14%	13%	82%
Ernsthausen	5	17%	12%	26%	14%	17%	23%
Geo. Henderson £	8	10%	8%	11%	8%	11%	16%
Kettlewell Bullen	6	16%	-4%	12%	24%	16%	42%
FW Heilgers						11%	110%
Begg Dunlop					6%	11%	44%
Anderson Wright						24%	54%
McLeod							41%
Barry	2	26%	15%	43%	21%	19%	204%
Finlay Muir £	10	7%	5%	10%	2%	6%	30%
Gillanders Arbuthnot	9	7%		8%	6%	8%	45%
Apcar		15%		12%	16%		
Average		**17%**	**10%**	**25%**	**16%**	**14%**	**62%**
St dev as % of average		**46%**	**79%**	**72%**	**75%**	**35%**	**79%**

+By the end of the war, deferred investment plans entailed the accumulation of large reserves, decreasing the denominator for net block, distorting the results. I have taken the long-term average 1880-1913 to avoid this, while excluding the 1870s in order to obtain a sufficiently large sample for comparison.

Sources: *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.*

The long term average return on investment in fixed capital has Bird & Co as the best performing managing agent. This result is partly due to the results of the Union mill, their only mill up to the mid-1890s, which was purchased from the bankrupt Orient mill very cheaply. Bird & Co were able finance their expansion out of Union's profits to become the biggest agents in the industry measured by share of total looms, and maintained above average profitability in the process. Thomas Duff & Co retains its strong position using this measure of profitability despite the disadvantage of being a Sterling company caused by the depreciation of the rupee exchange rate. In terms of the decadal averages and the measure of dispersion, there is a notable difference with the previous table. There is a much more marked improvement in industry profitability, which was presumably associated with the adoption of much more careful methods of setting aside funds to cover depreciation by those agents which survived the crises of the 1870s and 1880s. While it is impractical to present the data for all the individual managed firms under the different managing agents, scrutiny of this data reveals no systematic edge in profitability accruing to newer mills. Partly, this may be because existing mills also introduced new capacity. That said, this evidence is consistent with the hypothesis that the level of technique was stagnant, or that any advances in technique embodied in new plant were offset in higher prices caused by bottlenecks and inflation in the costs of equipping mills.

Managing agents' commissions

The terms of commission paid to the managing agents are set out in Table 2.15.

Table 2.15: Managing agents' commission terms, 1879 and 1903, ("pl" = Rupees per loom, "[]" = guaranteed annual minimum rupees in square brackets).

Managing agents	1879 (*Jute Mills in Bengal*)	1903 (*Capital*)	Paraphrasing 1903 comment in *Capital*
Bird	5% profits + 35 pl	5% profits + 75 pl	very reasonable
Andrew Yule	5% profits + 20 pl [20,000]	2% sales + 100 pl [42,000]	minimum paid past year
Ernsthausen	5% profits + 20 pl [20,000]	5% profits [36,000]	pay agents' office costs
Kettlewell-Bullen	5% profits + 40 pl	2.5% sales	
Mcintosh	5% profits + 20 pl [12,000]	*	
FW Heilgers	-	10% profits + 50 pl	
Begg-Dunlop	-	5% profits + 15 pl	inadequate
Anderson Wright	-	40 pl	most moderate
Barry	2.5% sales	2.5% sales + 4 pl	
Thomas Duff £	3% sales	3% sales	
Duncan £	-	2.5% sales + 67 pl	rather liberal
Macneill £	5% sales	5% sales	affected dividends
Finlay Muir £	5% sales	5% sales	
Mackinnon £	5% sales	5% sales	affected dividends
Jardine Skinner	2.5% sales + 10 pl	2.5% sales + 10 pl	heavy interest on advances
Gillanders	-	2.5% sales	bank rate on advances
Apcar	3% sales	3% sales	
Macallister	3% sales	*	
Rushton Bros	3% sales	*	

- denotes firm not yet formed. * denotes firm ceased operating. Mills are ordered, first by the market share of managing agents in 1919, then by the year in which the mill commenced operations.

Sources: 1879 figures from *Jute Mills in Bengal*, (Dundee, 1880), pp91-92; 1903 figures from *Capital*, 3 Mar, 1904, p368; Thomas Duff and Finlay, Muir managed mills, figures from company records.

The evidence is fragmentary as levels of managing agency commission were a closely guarded secret. However, it appears that there was a general move by the rupee companies after 1903 to a profits-based commission that was considerably less remunerative in years of average profits than the sales-based commission maintained by the Sterling companies.[17] This is borne out by the evidence of lower commissions paid to new entrants such as Anderson, Wright & Co and Begg, Dunlop & Co seeking to win agency business, also to Ernsthausen, faced with the threat of losing their agency of the Howrah mill in 1894.[18] This is further evidenced by the concession of a lower profit-based commission by Thomas Duff & Co to the Victoria mill from 1913.[19]

As was also discussed in the previous chapter, Tables 2.14 and 2.15 confirm that there was a gradual process of reducing sales-based commissions – charged as a cost on working account before profits were declared – or to replacing them altogether with a minimum floor on agents' income combined with profit-based commissions to incentivise performance. This finding accords with the picture of increasing competition between agents to capture the rents available from setting up new mill companies, and to be seen to offer more reasonable terms to attract shareholders. To what extent did differences in the contractual terms – whether based on profits or sales – translate into different levels of remuneration for the agents? Table 2.16 gives estimates of the commissions earned per loom.

[17] P. S. Lokanathan, *Industrial Organisation in India* (London, 1935), p. 335, *Report of the Indian Tariff Board (Cotton Textile Industry Enquiry), Vol III, Evidence* (Bombay, 1927), p. 323.

[18] "Commercial Markets; from our Calcutta Correspondent", 17 Jul 1894, *Dundee Advertiser*, 9 Aug 1894, p. 4.; "Calcutta Jute Market; from our own Correspondent", 8 Oct 1894, *Dundee Courier*, 9 Oct 1894, p. 4; "Calcutta Jute Market; from our own Correspondent", 26 Sep 1894, *Dundee Courier*, 15 Oct 1894, p. 4.

[19] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 225, 22 Apr 1913.

Table 2.16: Estimate of managing agents' commissions per loom, (Rs, constant prices, 1873 = 1), ranked in ascending order by 1870-1919 average:

Agents	1870-1919	1880s	1890s	1900s	1910s
Anderson Wright	24			27	22
Ernsthausen	49	69	43	40	45
Begg Dunlop	55			37	68
Bemis	56				56
Andrew Yule	66	56	51	72	91
McLeod	71				71
Bird	97	116	128	76	70
Kettlewell Bullen	113	108	108	116	126
Geo. Henderson £	114	126	108	116	126
Gillanders Arbuthnot	118	125	108	117	126
Barry	119	130	113	119	127
Jardine Skinner	121	116	115	122	130
Finlay, Muir £	123	115	140	127	127
FW Heilgers	126			86	153
Thomas Duff £	138	86	129	136	136
Apcar	142	155	130	136	
Duncan Bros & Co £	143			150	132
Mackinnon Mackenzie £	222	214	216	232	251
Macneill £	225	214	216	232	251
Weighted average of all mills	**113**	**118**	**121**	**109**	**105**

Sources: As above, Table 2.15. Sales-based commission estimated by allocating estimated industry sales to individual mills on basis of their share of industry loom capacity. Rebates on commission reported in any given year have also been taken into account.

The industry average for commission income per loom only rose slightly in the 1890s compared to the 1880s despite the abandonment of short-time working which had reduced output – and by extension commissions - by a third in the later years of the 1880s. The huge profits of the 1910s translated into a modest increase in average commissions per loom in the industry. Andrew Yule and Ernsthausen adopted more competitive terms at an early stage. In Ernsthausen's case, they were in a weak position relative to their shareholders after their European corresponding firm went bankrupt in the crisis of 1894 and they had to reform as a limited company.[20] Newer entrants like Begg, Dunlop, Mcleod and Heilgers offered more competitive terms to gain a foothold in the market. Anderson, Wright & Co, a relative minnow amongst the other agents, offered the best terms of all. However, the trend is belied by the

[20] 'Calcutta Jute Market', *Dundee Courier*, 8 Oct, 1894, p. 4; 15 Oct, 1894, p. 4.

commissions earned by the managing agents of Sterling mills, suggesting that they were relatively insulated from these competitive pressures. The power relationships which influenced distributional conflict between shareholders and managing agents are considered in more detail in the next chapter. How did commissions compare to dividends to shareholders? The table below includes averages for commissions and dividends paid relative to total equity to give a sense of their relative movement. The calculation for dividends includes all payments to shareholders in the equity of the mill companies, whether holders of ordinary shares or of preference shares.

Table 2.17: Estimates of managing agents' commissions, expressed as a percentage of total dividends on equity, (ordinary and preference share capital), paid to shareholders. (The order is the same as the previous table for average commissions per loom.)

Agents	Rank	1870-1919	1880s	1890s	1900s	1910s
Anderson Wright					17%	4%
Ernsthausen	1	17%	22%	15%	13%	15%
Begg Dunlop					21%	15%
Bemis						6%
Andrew Yule	2	19%	16%	19%	41%	15%
McLeod						18%
Bird	3	27%	31%	34%	33%	16%
Kettlewell Bullen	8	51%	98%	35%	52%	43%
Geo. Henderson £	7	39%	33%	49%	67%	81%
Gillanders Arbuthnot	9	55%	102%	73%	111%	29%
Barry	5	31%	39%	41%	71%	34%
Jardine Skinner	6	38%	86%	31%	57%	23%
Finlay, Muir £	11	68%	55%	297%	174%	33%
FW Heilgers					65%	32%
Thomas Duff £	4	29%	14%	32%	49%	34%
Apcar	13	88%	81%	90%	151%	
Duncan Bros & Co £					65%	92%
Mackinnon Mackenzie £	10	62%	61%	71%	128%	42%
Macneill £	12	84%	95%	149%	138%	48%
Weighted average		**29%**	**36%**	**43%**	**65%**	**28%**

Sources: As for Table 2.15 above. Dividend figures from *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.*

Most of the change in the magnitude of commission payments relative to dividend payments on equity is explained by changes in the latter variable. Commissions were stable relative to dividends or, in other words, managing agents were more insulated from the risks of poor performance than shareholders in the jute mill companies. The table indicates a bifurcation between two different groups within the group with above average commission income per loom. The managing agents Thomas Duff & Co, Jardine, Skinner & Co and Barry & Co were sufficiently profitable to be able to capture rents without it being detrimental to their capacity to maintain a high level of dividend payments to their shareholders. The next chapter will explain this evidence of a competitive advantage possessed by Thomas Duff & Co. On the other hand, it becomes clear that, in the case of less profitable mills with directorates in Glasgow - Champdany, Ganges and the India Jute Co – their managing agents found themselves in a zero-sum distributional conflict with shareholders.[21]

Ownership, investment capital structure and competing claims on profits

Chapter 1 described the process whereby the investment capital of the jute mill companies was restructured over time to include a bigger element of guaranteed income in the form of debentures and preference dividends in the form of preference shares in exchange for a lower rate of return relative to ordinary shareholders. Mill companies created a mixed portfolio of different categories of equity with different risks and obligations.

[21] The case of the Champdany Co, managed by James Finlay's Indian subsidiary Finlay, Muir is discussed in detail in Ross Stewart, 'Scottish Company Accounting, 1870-1920', unpublished PhD thesis, University of Glasgow, 1986, pp. 256-62, 268-79.

Table 2.18: Relative % proportions of ordinary shares, preference shares and debentures, decadal averages.

	1880s			1890s			1900s			1910s		
Agents	**o**	**p**	**d**	**o**	**p**	**d**	**o**	**p**	**d**	**o**	**p**	**d**
Bird	97	0	3	80	7	13	43	34	24	35	33	32
Thomas Duff £	92	0	8	82	4	14	54	22	24	56	27	17
Andrew Yule	100	0	0	65	12	24	46	28	26	50	29	21
Jardine Skinner	69	0	31	40	25	34	50	23	27	50	25	25
Ernsthausen	78	0	22	77	20	4	38	36	26	26	38	36
Geo. Henderson £	100	0	0	75	17	8	51	30	19	53	26	21
Kettlewell B	87	0	13	37	38	25	38	38	25	37	30	32
Duncan £				89	11	0	67	22	11	45	24	31
FW Heilgers							39	27	34	34	32	34
Begg Dunlop				40	37	24	33	27	41	31	34	35
Anderson Wright				64	0	36	29	26	45	59	15	26
McLeod							88	0	12	35	39	26
Barry	100	0	0	64	8	28	25	42	33	22	49	29
Macneill £	64	16	20	62	17	21	61	17	22	71	19	11
Finlay Muir £	100	0	0	100	0	0	100	0	0	100	0	0
Mackinnon £	100	0	0	100	0	0	100	0	0	100	0	0
Gillanders	64	0	36	50	22	28	47	28	25	37	28	35
Apcar	100	0	0	24	26	50	30	70	0			
Weighted average	**91**	**0**	**9**	**67**	**14**	**19**	**47**	**27**	**26**	**45**	**29**	**26**

Sources: *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.*

The implications of a changing structure of equity on shareholders and managing agents/directors was elaborated in the previous chapter. In terms of the variation between firms, the notable feature of Table 2.18 is the convergence of different groups of firms under each agent on the industry average distribution of equity capital amongst debentures, preference and ordinary shares. This is perhaps explained by the fact that the imperative to raise new investment funds to finance expansion meant that the jute mill companies could no longer rely solely on personal networks. The growing use by the jute mill companies of an increasingly sophisticated Calcutta share capital market allowed investment funds to be raised relatively cheaply without threatening loss of control so long as a sufficient number of ordinary shareholders with voting powers remained loyal to the goals of the companies' directors and managing agents. On the other hand, the decline in the relative proportion of ordinary shares diluted their dividend-earning power. In terms of the lack of variation among firms and their convergence to a similar investment capital structure, the main exception shown in the table applies to the Champdany and India mills managed by Finlay, Muir & Co and Mackinnon, Mackenzie & Co which retained all of their equity in the form of ordinary shares. This is explained by the slow growth of these firms, which meant there was less need to raise alternative sources of investment funds. Also, these were two of the larger managing agents with very substantial interests in tea and shipping and large financial resources, which meant that shares in their managed companies were held by a narrow coterie of wealthy partners and managers working for the agents.[22]

Ownership

Table 2.19 below records the relative holdings of ordinary shares, preference shares and debentures of a sample of 97 investors in Calcutta jute mills who died between 1874 and 1925, drawn from inventories of moveable assets at death preserved in Scottish probate records.[23] Given their historic over-representation in Calcutta's commercial community in the colonial period, many Scots were also directors of Rupee jute mill companies and partners of managing agents associated with the industry. Therefore, a subset of the sample does record holdings of shares and debentures in rupee mills listed in Calcutta. The sample contains 44 directors and partners in managing agencies directing the affairs of Sterling jute mill companies, 12 directors and partners in managing agencies directing the affairs of Rupee jute mill companies, five Dundee merchants and manufacturers with no direct interest as a manager or employee of a Calcutta jute mill, eight Calcutta merchants and jute dealers with no direct interest as a manager or employee of a Calcutta jute mill, and 28 Calcutta commercial assistants and mill managers in the jute mill companies, who were mostly natives of Dundee. Table 2.19 below

[22] MS UGD 91/7/1/2/2, Champdany Co, MOTD, shareholder lists, 22 Jul 1873, 15 Jan 1890, 17 Aug 1893, 20 Apr 1900, 27 Sep 1921; Forbes Munro, *Maritime Enterprise*, pp. 93-4.

[23] National Archive of Scotland, Probate Records.

depicts the pattern over time of relative holdings of ordinary shares, preference shares and debentures in the sample for the purpose of comparison with Table 2.18 above.

Table 2.19: Sample of 97 investors over time - relative % proportions of ordinary shares, preference shares and debentures, decadal averages.

		Ordinary		Preference		Debentures	
No	Years	Sample	Industry	Sample	Industry	Sample	Industry
7	1870-1890	99%	91%	1%	0%	0%	9%
17	1890-1900	90%	67%	6%	14%	5%	19%
24	1900-1910	67%	47%	27%	27%	6%	26%
49	1910-1925	61%	45%	28%	29%	10%	26%
97	**Unweighted average**	**79%**	**63%**	**16%**	**18%**	**5%**	**20%**

Sources: National Archive of Scotland, Probate Records, Wills and Inventories.

The table establishes that the sample of investors disproportionately preferred to hold ordinary shares and were averse to holding debentures relative to industry averages over time. They tended to hold preference shares in proportion to the industry average, suggesting that the investors in the sample were relatively active in making purchases of ordinary shares in secondary markets. Consulting individuals' inventories of moveable estate, there are numerous instances in the sample of investors holding only one category of investment in a particular mill, which also suggests that both ordinary and preference shares were traded quite actively in secondary markets. This finding is supported by the frequency with which changing prices were recorded for all categories of equity in the pages listing daily share prices of individual mill companies in the weekly Calcutta financial newspaper, *Capital,* from the 1890s, with ordinary shares, preference shares and debentures in jute mills each occupying a page of each weekly issue. Impressionistically, it was rare that a market price was not recorded at which a buyer would meet a seller's price.[24] Table 2.20 below shows the pattern of investment in the sample - relative to the industry average - when investors are categorized by their relationship to the industry.

[24] *Capital*, 'The Share Market. Stocks and Shares, reported Transactions'.

Table 2.20: Sample of 97 investors categorized by relationship to industry - relative % proportions of ordinary shares (O), preference shares (P), and debentures (D).

No	Category of investor	O	P	D	Total
44	Sterling directors/ managing agents	86%	11%	2%	100%
12	Rupee directors/ managing agents	67%	28%	4%	100%
5	Dundee merchants & manufacturers	77%	23%	0%	100%
8	Calcutta merchants & jute dealers	38%	29%	34%	100%
28	Commercial assistants & mill managers	46%	39%	16%	100%
97	***Unweighted sample average***	***63%***	***26%***	***11%***	***100%***
	Industry average	**63%**	**18%**	**20%**	**100%**

Sources: National Archive of Scotland, Probate Records, Wills and Inventories. The categorisation of investors is based on detailed biographical research.

The small size of subsample for the categories “Rupee directors”, “Dundee merchants and manufacturers” and “Calcutta merchants & jute dealers” may mean that the results above are not representative. Bearing in mind this caveat, the categorisation into subsamples provides striking confirmation of differences in investment patterns across different types of shareholder. The first three categories of shareholder were generally very wealthy, all revealing a preference for ordinary shares, with higher risk and higher returns. Comparison of Sterling and Rupee directors reveals a pattern of shareholding that reflects the relative proportion of types of investment capital utilised by their respective jute mill companies. Sterling directors held more ordinary shares relative to preference shares compared to Rupee directors, which partly reflects the fact that two of the seven Sterling mill companies – those managed by Finlay, Muir and Mackinnon, Mackenzie - did not issue preference shares during this period. Neither tended to hold debentures. On the other hand, investors in the categories “Calcutta merchants & jute dealers” and “Commercial assistants & mill managers” were relatively risk averse – or had more difficulty obtaining ordinary shares. The former held preference shares in proportion to other types of investment at a rate well above the industry average while the latter held both preference shares and debentures well above the industry average.

An unweighted sample average is used in Table 2.21 for comparison with the industry average because the weighted average is distorted by the over-representation of Sterling directors in the sample relative to the population of investors in the industry. It is striking that debentures are under-represented in the sample. This finding is consistent with the evidence that the market for debentures functioned in a more impersonal fashion in comparison to equity. Debentures were much more likely to be held by institutional investors, particularly banks, explaining the discrepancy in the sample and industry averages.[25] There is also evidence that Marwari financiers and jute dealers took up large blocks of debentures, as well as other shares, in the jute mill companies towards the end of the war.[26]

The data in Table 2.21 and 2.22 below provides evidence of other types of divergence in the pattern of shareholding by different categories of investor. Table 2.21 shows the average number of ordinary shares, preference shares and debentures held, while Table 2.22 shows the average number of blocks of shares and debentures held in different mill companies.

Table 2.21: Average no of standardised £10 shares or debentures held.

No	Category of investor	O	P	D	Total
44	Sterling directors/ managing agents	994	131	25	1,150
12	Rupee directors/ managing agents	858	362	57	1,278
5	Dundee merchants & manufacturers	781	230	0	1,012
8	Calcutta merchants, jute dealers	212	161	188	560
28	Calcutta commercial assistants & mill managers	159	134	55	348
97	***Unweighted average***	**601**	**204**	**65**	**870**

Sources: National Archive of Scotland, Probate Records, Wills and Inventories.

Number of 100 Rupee shares standardised to £10 par value at £1 = Rs15, the prevailing exchange rate throughout the period.

Directors and managing agents of both Sterling and Rupee jute mill companies held a greater number of shares on average than the assorted Calcutta merchants, jute dealers, commercial assistants and mill managers lower down the social scale, as was to be expected. The wealth

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[25] See Amiya Bagchi, *The Presidency Banks and the Indian Economy, 1876-1914* (Oxford, 1989); Bagchi, *The Evolution of the State Bank of India, vol. II; the Era of the Presidency Banks, 1876-1920* (London, 1997).

[26] Omkar Goswami, "Then came the Marwaris: Some aspects of the changes in the pattern of industrial control in Eastern India", *Indian Economic and Social History Review*, September 1985, 22.3, pp. 231-2.

profile of Rupee and Sterling directors and managing agents was similar. The Rupee directors had an average moveable estate at death in the UK of £179,000, compared to £167,000 for the Sterling directors. The market valuation of the Rupee directors' investments in Calcutta jute mills was on average £22,000 compared to £19,000 for Sterling directors, or 12% of moveable estate in both cases. Investments in jute mills comprised similar proportions of total Indian investments, 50% for Rupee directors and 46% for Sterling directors. Assuming the small sample of Rupee directors is representative, part of the explanation for their greater propensity to hold preference shares was due to the less frequent use of preference shares by the Sterling companies. The sample is unrepresentative in the sense that 42% of the Rupee sample comprises directors who died in or after 1918, but only 18% of Sterling directors. The greater use of preference shares over time is therefore reflected in the subsamples.

Table 2.22: Average number of shareholdings in different jute mill companies in each category.

No	Category of investor	O	P	D
44	Sterling directors/ managing agents	2.0	1.4	1.3
12	Rupee directors/ managing agents	3.1	5.2	4.5
5	Dundee merchants & manufacturers	1.5	3.0	0.0
8	Calcutta merchants, jute dealers	2.3	2.4	4.0
28	Calcutta commercial assistants & mill managers	2.3	2.4	2.5
97	**Unweighted average**	**2.2**	**2.9**	**2.5**

Sources: National Archive of Scotland, Probate Records, Wills and Inventories.

The relative preponderance of Rupee directors who died after 1918 compared to Sterling directors is also part of the explanation for the greater number of blocks of shares or debentures held in different companies. More companies were created over time to invest in. However, the discrepancy also reflects the fact that the managing agents of Sterling mills tended to expand productive capacity through additional investment in existing mill companies, while the managing agents of Rupee mills floated new companies to expand. Table 2.3 above showed that managing agents of Rupee and Sterling mill companies on average managed respectively 3.0 and 1.5 mill companies, with an average productive capacity respectively of 927 looms and 1384 looms. Directors of Rupee mills tended to spread their investments over a greater number of jute mill companies under their own management. Although Calcutta merchants, jute dealers, commercial assistants and mill managers held less shares overall, the average number of blocks of shares held in each investment category and the relative stability across categories suggests an element of conscious diversification to spread risk.

The increasing scale of the investment funds required to finance growth had to be balanced by managing agents against the imperative to maintain control of the managed companies and the associated agency rents while tying down a minimum amount of their own capital in the process. The activity in liquid secondary markets permitted less wealthy or other types of more risk-averse shareholders to enter the share market. One of the two investors in the sample who held solely debentures, Thomas Spalding, was a commercial assistant working for various managing agents for 20 years prior to his death, and his debenture holdings comprised half his recorded estate of £13,574 (in 1870 prices). This was small beer compared to the average jute shareholding of a typical director or partner in a managing agency running a Calcutta jute mill in the sample, which was £26,000 (expressed in constant 1870 prices). This sample of 56 Rupee and Sterling directors reported an average moveable estate at death in the United Kingdom of £170,000, (also constant prices). Their investments in jute on average represented only about 12% of their moveable assets at death, although earnings from the jute industry were generally the initial and primary source of wealth for this group.

The process of issuing preference shares or debentures to dilute ordinary share capital could be particularly attractive to some of the less profitable jute mill companies and managing agents as a way to raise finance more cheaply while attempting to bolster their share price for ordinary shares. However, it was attended with serious risks. In the case of two mill companies managed by Armenian managing agents, Sarkies' Alexandra mill and Apcar's Seebpore mill, new investment financed by preference shares and debentures did not address their below-average profitability. Payments on debentures and arrears of payments on preference shares became a heavy burden, depressing their capacity to pay dividends on the ordinary shares. Under threat of default on their debenture payments, Sarkies were forced to turn over the managing agency rights to Begg, Dunlop & Co in 1909.[27] Apcar & Co's Seebpore mill ceased trading prior to being taken over by Kettlewell, Bullen & Co to re-emerge as Fort William mill.[28] The original directors who had invested in Seebpore then took substantial holdings in jute mills managed by Bird and Andrew Yule but they had lost the lucrative rents derived from acting as managing agents.[29]

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[27] India Office Records, MSS Eur F308, GH Sutherland, Begg Dunlop & Co, correspondence and accounts, letter from Charles W Tosh, Calcutta manager, to GH Sutherland, 24 Jun 1909; Bagchi, *The Evolution of the State Bank of India, vol. II*, pp. 89-91.

[28] Bagchi, *The Evolution of the State Bank of India, vol. II*, pp. 89-91.

[29] See listings of Apcars as directors in Bird and Yule managed mills in *IIYB*.

Rates of dividends on ordinary and preference shares and debenture interest.

The variation in rates of dividends paid to ordinary shareholders is shown in Table 2.23 below.

Table 2.23: Real rate of dividend on ordinary shares, (constant prices, 1873 = 1), rank given in descending order.

Managing Agents	Rank	1870-1913	1870s	1880s	1890s	1900s	1910s
Bird	2	13.1%		17.3%	16.0%	9.0%	30.9%
Thomas Duff £	5	10.9%	12.2%	18.1%	7.5%	7.5%	15.7%
Andrew Yule	6	8.5%	8.8%	8.1%	9.3%	8.0%	31.9%
Jardine Skinner	1	13.2%	0.0%	10.8%	23.5%	9.2%	42.9%
Ernsthausen	8	7.0%	3.0%	7.9%	7.6%	9.4%	26.1%
Geo. Henderson £	12	5.0%	8.4%	6.4%	3.3%	3.2%	7.0%
Kettlewell Bullen	10	5.5%	4.0%	2.0%	7.0%	8.5%	23.6%
Duncan Bros & Co £	11	5.5%			0.0%	8.2%	6.6%
FW Heilgers	7	8.3%				8.1%	47.4%
Begg Dunlop	9	6.2%			2.5%	7.1%	36.0%
Anderson Wright	3	13.0%			11.2%	15.1%	31.0%
McLeod	18	2.2%				2.5%	26.2%
Barry	4	11.2%	20.0%	8.0%	9.6%	7.9%	33.2%
Macneill £	17	2.3%			1.3%	3.4%	41.6%
Finlay Muir £	15	3.2%	5.2%	4.8%	1.3%	2.3%	14.8%
Mackinnon Mackenzie £	13	4.5%		0.0%	5.9%	4.8%	30.9%
Gillanders Arbuthnot	16	2.7%		3.7%	4.2%	1.8%	18.6%
Apcar	14	3.9%	2.8%	3.7%	4.6%	4.2%	
Average all firms		**7.7%**	**10.6%**	**7.4%**	**6.7%**	**6.5%**	**25.1%**
St Dev as % of average		**50%**	**57%**	**76%**	**90%**	**52%**	**47%**

Sources: *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.*

The real rate of return is calculated by deflating the value of dividends, as well as the value of ordinary share capital in the denominator by year of issue. The issue of bonus shares is included in the calculation as a one-off payment. Sterling dividends were converted into rupees at the prevailing exchange rate in any given year.

As noted in the previous chapter, the long-term trend was for declining real terms return on dividends, reflecting the declining long-term profitability of the industry, a trend interrupted by exceptionally profitable conditions in wartime from 1914. It is notable that the standard deviation relative to the average shows the attraction of entering the industry in the 1890s as demand conditions improved, bringing an end to short-time working and renewed investment in productive capacity, then declines thereafter. This supports the hypothesis of a convergence of firm performance after the 1890s, as profits were competed away over time, with the steady but controlled entry of new managing agents into the industry under oligopolistic conditions.

However, the trend to convergence around a more competitive equilibrium should not obscure the persistence of significant differences in how well mill firms under different managing agents performed to remunerate their shareholders. The ranking of managing agents in paying ordinary dividends is highly correlated to profitability and market share over time. The big four managing agents in 1919 – Bird, Thomas Duff, Andrew Yule and Jardine, Skinner – succeeded in retaining or increasing their market share from the 1880s to the end of the period. They also ranked in the top six managing agents in terms of paying dividends, paying 11% in real terms on average. Above-average profitability permitted a sustainable policy of paying high dividends, creating a virtuous circle for attracting new investors to finance expansion. However, while Thomas Duff ranked first and third in terms of profitability relative to loom capacity and relative to investment in fixed capital respectively, they ranked fifth in terms of dividends on ordinary shares, suggesting a degree of insulation from the competitive discipline that exerted itself on rupee companies listed on the Calcutta stock exchange. On the other hand, the five managing agents which performed worst in terms of paying ordinary dividends to 1913, (excluding the newcomer McLeod), acted as agents to mills established in the period 1868-1883 and all failed to retain market share, paying only 3% in real terms. These differences were significant. In terms of the three Glasgow-based Sterling companies amongst the worst performers, this hamstrung their ability to expand throughout the period, and led to criticism that the high level of managing agency fee they commanded – 5% on sales – was pitting them against shareholders in a short-sighted zero-sum distributional conflict.[30] Ultimately, all three agents would relaunch their mills as Rupee companies, riding the post-war wave of investment euphoria.

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[30] Stewart, "Scottish Company Accounting, 1870-1920", pp. 256-62, 268-79.

Preference shares

As discussed in the previous chapter, preference shares were a hybrid form of equity with some of the fixed-income characteristics of external debt such as debentures that became widely used in the industry from the 1890s to finance expansion. The rate of return was fixed and they paid dividend in preference to the dividend on ordinary shares in any given year, or were paid in arrears in subsequent years. Their hybrid quality and lower risk relative to ordinary shares was reflected in much less variation in the rates obtaining between different managing agents.[31]

[31] Further work would be required to isolate the degree to which discrepancies between mills were based on bank interest rates in the year of issue. Lower interest rates in the UK explain in large part the lower rates obtained by Thomas Duff & Co for issuing preference share capital. The residual discrepancy was based on shareholders' assessment of risk in capital markets. It is striking that another *Sterling* company, Macneill & Co, managers of the Ganges jute mill, were forced to issue preference shares at 8% in 1891, a 60% premium on the rate obtained by Duff, after many years of sub-average performance in paying a dividend on ordinary shares while charging the highest rate of managing agency fee in the industry – a 5% commission on sales.

Table 2.24: Real rate of dividend on preference shares, (constant prices, 1873 = 1), rank given in ascending order.

Managing agents	**Rank**	**1890-1913**	**1890s**	**1900s**	**1910s**
Bird	7	5.6%	4.9%	6.0%	5.8%
Thomas Duff £	1	4.5%	4.5%	4.7%	3.7%
Andrew Yule	13	6.3%	6.6%	6.5%	5.4%
Jardine Skinner	2	4.8%	3.2%	5.2%	4.2%
Ernsthausen	8	5.8%	5.9%	5.7%	5.3%
Geo. Henderson £	12	6.0%	4.4%	6.9%	5.8%
Kettlewell Bullen	9	5.9%	6.4%	6.0%	5.1%
Duncan Bros & Co £	4	5.3%	5.7%	5.1%	5.3%
FW Heilgers	10	6.0%		6.0%	5.8%
Begg Dunlop	3	5.2%	6.8%	5.4%	4.9%
Anderson Wright	5	5.4%	5.2%	5.5%	4.7%
McLeod	14	6.6%		2.2%	7.4%
Barry	6	5.5%	6.0%	5.5%	4.1%
Macneill £	15	6.7%	7.1%	6.7%	3.2%
Finlay Muir £		n/a	n/a	n/a	n/a
Mackinnon Mackenzie £		n/a	n/a	n/a	n/a
Gillanders Arbuthnot	11	6.0%	5.5%	6.4%	5.5%
Apcar	16	7.2%	7.6%	7.4%	
Weighted industry average		**6.5%**	**6.4%**	**5.8%**	**5.1%**
St Dev as % of average		**11%**	**19%**	**20%**	**20%**

Sources: *Jute Mills in Bengal*, *Friend of India and Statesman*, *Dundee Advertiser*, *IIYB.*

Failure to pay a preference dividend was exceptional in the industry during the period to 1921. Both Sarkies' Alexandra mill and Apcar's Seebpore mill went bankrupt and changed hands after failing to pay preference dividends in two consecutive years. Henderson's Barnagore mill had to make good four years of arrears in 1896 after a restructuring of the company. Otherwise, the crisis of 1910 was reflected by 10 mill companies deferring payment of the preference dividend, while a further 6 companies failed to pay the preference dividend in 1914.

Debentures

Debentures were also a popular financial instrument for raising finance at low interest. Given the undeveloped nature of the banking system and deposit accounts, holdings of jute mill debentures in jute mills – a growing and profitable industry - were a popular alternative form of low risk investment to deposit accounts or Government of India paper.[32] The Sterling mills that availed themselves of the facility were able to take advantage of deeper financial markets in the UK to raise long-term external debt relatively cheaply. As with preference shares, there was little variation between managing agents.

Judging the relative performance of different managing agents in securing returns to their principals, the shareholders, requires consideration of the relative gearing of different types of financing over the long-term. In some cases high dividends were paid on a relatively narrow base of ordinary shares relative to the total share capital including debentures. There might also be a high level of external debt on which to pay interest. The mills managed by Jardine, Skinner & Co appear to have been more reliant on external loans than normal. Jardine, Skinner earned a high level of commission on these loans.[33]

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[32] For Indian banking and deposit accounts, see Bagchi, *The Presidency Banks*; Bagchi, *Evolution of the State Bank of India, Vol II.*

[33] *Capital*, 3 Mar 1904, p. 368, “Managing Agents of Jute Mills.”

Conclusion

This chapter developed a quantitative assessment of the variations in the performance of different firms within the industry. It can be seen that some managing agents to expand rapidly and increase market share at the expense of others whose market share declined or who were forced out of the industry. Thomas Duff & Co were exceptional amongst the managing agents of Sterling mill companies in achieving the profits and dividends necessary to do this. A series of quantitative indicators showed that the degree of variation in managing agents narrowed in the long-run up to the war.

The quantitative evidence of variation in managing agents' performance poses questions about the nature of the competitive advantage that firms internalized. The following chapters explore the nature of the competitive advantage possessed by Thomas Duff & Co, one of the most successful managing agents.

Chapter 3. The Origins and Growth of Foreign Direct Investment in the Calcutta Jute Industry by a Dundonian Multinational Enterprise – a Case Study of the Thomas Duff & Co managing agency, 1872-1921.

Introduction

This chapter presents a detailed case study of the network of jute mill companies in Calcutta under the auspices of the managing agents, Thomas Duff & Co. As the only managing agent interested in jute manufacturing in Calcutta which had a Dundee headquarters, this firm represents a very specific case. The firm also specialised in jute manufacture and consciously avoided exploiting opportunities to diversify into unrelated industries to achieve the economies of scope that were a characteristic feature of the development of the Calcutta managing agencies. Chapters 3 and 4 demonstrate that, typically, Calcutta firms which invested in jute manufacturing did so as part of a process of diversification away from mercantile activities in Calcutta in the pursuit of more profitable productive investment in manufacturing, food processing, mining and services in India with an export orientation. Where they had strategic direction by a parent firm in the UK, the parent tended to be located in London or Glasgow, and the capital accumulated by these parents at their birth was often from Glasgow and derived from investment in cotton manufacture or merchanting. The analytical and heuristic value of selecting such an atypical case for a detailed study cannot then be based on its being the most apt case for the purpose of making inferences about the generality of firms in the industry. The study of Thomas Duff & Co serves rather different purposes.

The first purpose is to consider precisely why Thomas Duff & Co took the path from investment in jute manufacturing in Dundee to jute manufacturing in Calcutta. This was not followed by other Dundee firms. Instead, exploration of the Dundonian context in which Thomas Duff & Co originated reveals a pronounced antipathy on the part of the most successful jute manufacturers to follow this path. The reasons for this are considered in the next section.

On the other hand, the history of Thomas Duff also reveals that there was a constituency In Dundee for investing in jute manufacturing to exploit location-specific knowledge of jute manufacturing processes and marketing generated in Dundee that could be translated into a competitive advantage in Calcutta. In the process, it is demonstrated that this constituency existed for reasons that were very much bound up with the antipathy of Dundee's leading manufacturers. The leading tier of Dundee jute manufacturers created vehicles to direct surplus capital generated in jute manufacturing into foreign investments in North America as a means, simultaneously, to extend their marketing network, to generate new sources of demand and to secure superior, less risky, returns on their surplus capital than could be generated by ploughing all of it back into investment in new capacity in Dundee.[1] The same process of declining profitability of jute manufacturing in Dundee led a second tier of investors who were less successful in Dundee and were excluded from the reaping the full benefits of investments in North America to create an alternative vehicle to diversify away from jute manufacturing in Dundee. Thomas Duff represented one such vehicle. This chapter explores what made Thomas Duff & Co a successful vehicle for this task by exploring what were the competitive advantages embodied in the pooled knowledge of its directorate, its employees,

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[1] UDA, MS 66/2/2 Cox Bros Ltd, Private Letter Books; W. Turrentine Jackson, *The Enterprising Scot; Investors in the American West after 1873* (Edinburgh, 1968); Charles Munn, *Investing for Generations: A History of Alliance Trust* (Edinburgh, 2013).

its broader networks, paying particular attention to the innovative institutional form of the firm in terms of its ownership structure. In the process, it is demonstrated how location-specific knowledge generated in Dundee could be embodied in the form taken by this multinational firm and exported successfully to Calcutta to become an important source of competitive advantage there. Indeed, it was a necessary condition of their success that all the Calcutta jute manufacturers did this to some extent. However, this was a necessary but insufficient condition for success. The examination of Thomas Duff's history brings to light the existence of another Dundee firm, the Victoria Co, which sought to replicate its success and failed, ultimately being absorbed by Thomas Duff & Co. This negative case is analysed in detail in order to demonstrate how success in Calcutta depended crucially on synthesising location specific knowledge of jute manufacturing deriving from Dundee with location specific knowledge of operating a manufacturing concern in Calcutta markets. Only on the basis of this synthesis could sufficient conditions be created for ultimate success. The study of the Victoria Co and its relations with Thomas Duff & Co also throws up important insights into the nature and limits of the Dundee share capital market and competition for investible funds within it, and how Thomas Duff & Co was able to both cultivate a shareholder constituency in Dundee and to transform it in line with its requirements to extend its capital base as the scale of investments in Calcutta grew. This is explained through a detailed exploration of the social and occupational characteristics of the firm's shareholders and how they evolved over time. This goes beyond simple description by cracking the surface appearance of juridical ownership through operationalising the concept of effective control within the bounds of the firm, which requires consideration of the hybrid character of a firm which adapted the most advanced institutional firm structures of limited liability and public ownership to the purposes of substantive family control. Thus, one encounters the contradiction of the public limited company which embodies apparently impersonal transactions in capital markets disguising the substantive reality of highly personalised pooled transactions of a coterie of several controlling family networks consciously engaged in their own reproduction.[2] Extending this mode of analysis, this hybrid of family-public firm applies also to the reproduction of strategic direction over time in the management of the firm mediated by the marriage market. In other words, the strategic goal of reproducing the influence of the founding family networks pooled together within the firm's management and ownership structures required them to demonstrate an adaptability to meet the changing demands of the industry over time as it evolved, which required the internalisation of new types of knowledge within the firm that were beyond the capacities of the original family network to fulfil, specifically the need for the firm to introduce new professionalised skills such as knowledge of modern accounting and management practices. The strategic goal was met, paradoxically, through the decision to subordinate the nepotitistic requirements of reproducing the family network to the requirement to recruit these skills through a tactical retreat which involved recruiting a new layer of professional managers on the basis of merit from beyond the ranks of the founding families, by recourse to broader Dundee networks through personalised knowledge of the new recruits who came from the ranks of founders business associates and fellow shareholders. Crucially, the new recruits were able to maintain the firm's Dundee identity which was a defining feature of its ownership structure, and which was maintained despite adverse changes in corporate taxation which led the Glasgow-based firms to reinvent themselves as rupee companies.

Having considered the salience and persistence of the firm's Dundee identity, the analysis shifts focus to a conceptualisation of differentiation between the interests of the shareholders and the directorate of the firm, which was institutionalised through the creation of Thomas Duff & Co in the early 1880s as a managing agency to undertake the management of the mill companies, Samnuggur and Titaghur, and later Victoria. Uniquely, Thomas Duff & Co

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[2] Geoffrey Jones and Mary Rose, introductory chapter in Jones and Rose (eds), *Family Capitalism* (Routledge, 1994), pp. 1-16.

originated as a private limited company in contrast to the partnership form that characterised the other managing agencies in Calcutta in their evolution from mercantile partnerships. Moreover, as a jute manufacturing specialist, this particular instantiation of the managing agency structure stripped out the other functions which tended to be referred to justify their existence – i.e. as a parent firm responsible for promoting and coordinating the activities of a diverse group of subsidiaries. Thus, paradoxically, the very uniqueness of Thomas Duff & Co – narrowly defined as managing agents[3] – serves as a particularly useful case for isolating and studying what was qualitatively new and distinctive about the managing agency system in Eastern India, their function as a rent extraction mechanism in the interests of an inner group of directors or partners. This is illustrated by analysing the relationships between Thomas Duff & Co and its managed mills, and then proceeding to a close study of instances when the reproduction of this rent extraction mechanism came under threat, with particular reference to three legal disputes which led the directors to reformulate the managing agency's articles of association in order to retain control. Having identified the specific characteristics of the firm conditioning strategic decision making, the penultimate section of the chapter explores the firm's relationships with other managing agents in the industry through the mediation of the Indian Jute Mills Association, and their motivation for assuming a prominent role within it.

In conclusion, the analysis elaborates on what the implications are of conceptualising the institutional characteristics of this specific firm in evaluating the heuristic value of different approaches in the existing historiography of the firm in business history, which are concerned with merchants and multinationals, "family capitalism", foreign investment and "free-standing companies".

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[3] Note on terminology. Unless stated, I refer to "Thomas Duff & Co" or "the firm" or "the group" interchangeably to represent the group of three companies whose directorates were more or less identical – Thomas Duff & Co, the managing agents, and the two mill companies they managed, the Samnuggur and Titaghur Cos, distinguished from the Victoria Co with its independent board of directors.

3.1 Overview, 1874-1921.

Chapter 2 presented a comparative analysis of the performance of the different Calcutta managing agents in the jute industry. To recap, the evidence presented there established that Thomas Duff was consistently one of the most profitable managing agents and was able to achieve and maintain a large market share in a rapidly growing industry.

The Samnuggur Co was launched in Dundee in 1874 with a share capital of £120,000 to construct a jute mill at Samnuggur 17 miles to the north of Calcutta.[4] The mill initially had 200 looms - 150 sacking looms and 50 hessian looms, growing incrementally to 458 looms - 260 sacking looms and 198 hessian looms – on the eve of the first short time agreement of the Indian Jute Mills Association in 1885. Chakrabarty, citing Wallace, says of the Samnuggur Co's directors that they possessed 'contacts in the already-established world market for finished products of jute':

> There is an element of irony in the fact that the eventual supremacy of the Calcutta mills (over their Dundee counterparts) owed a great deal, initially at least, to their Dundee connections. The Samnugger Jute Factory Company Limited (1874), which is credited [by Wallace] with having done for the Calcutta industry "more than all the other companies put together" in their search for new markets, was floated by four businessmen in Dundee: Thomas Duff, J.J.Barrie, and "the brothers Nicoll of A. and J.Nicoll."[5]

Wallace provides evidence of the initial breakthrough made by Thomas Duff in export markets in Australia, whereas existing mills had been limited to servicing demand in local and coastal markets:

> They got an opening into the Australian and New Zealand markets for cornsacks, woolpacks and hessian bran bags, the mill agents, without any organised combine, nursed this outlet by turning out

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[4] See map locating Calcutta jute mills in D.R. Wallace, *Romance of Jute* (2nd revised ed, 1928), p. 130.

[5] Chakrabarty, *Rethinking Working Class History*, p. 24.

> and stocking bigger and bigger quantities of goods in anticipation of the seasonal orders… The ‘Frisco central hessian wheat pocket demand was fostered in like manner.[6]

Wallace also notes the transfer of technical expertise from Dundee embodied in the firm of Thomas Duff:

> They were particularly fortunate in their selection of an expert to conduct their business in the agents’…office. This gentleman, Mr.W.Smith, had forged his way from office boy in Messrs Cox Brothers, Lochee, to a confidential position with the firm. He was endowed with indomitable assurance and when he came to Calcutta had nothing to learn in the devious ways of jute. Backed by the practical experience and *business connections of the home board in foreign markets*, this company did more than all the companies put together to invade foreign markets.[7]

James Robertson, the Samnuggur mill manager, also played a prominent role in the new firm and supervised the construction of the new Titaghur mill in 1883. In its first seven years of operating from 1876 to 1882, the Samnuggur Co made £175,000 in net profits after allowing for depreciation and £145,000 paid out in dividends, repaying the initial investment.[8] In addition, £150,000 was accumulated in depreciation and reserve funds, which permitted the launch of the Titaghur Co in 1883 on the basis the issue of £105,000 of bonus shares to the existing shareholders of the Samnuggur Co.[9]

Wallace states:

> In this crisis, which had been building since 1875 – when “the other mills languished or went to the wall” – the Samnugger Jute Mill with its overseas markets paid a steady dividend of 10 per cent per annum, besides building up a huge reserve fund, enabling them to present their shareholders with

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[6] Wallace, *Romance of Jute,* (2nd revised ed, 1928), pp. 43-44.
[7] Wallace, *Romance of Jute*, pp. 36-37.
[8] UDA, MS 86/1/1/1, MOTD, Annual Reports to the shareholders.
[9] UDA, MS 86/1/6/1, Samnuggur Co, Memorandum and Articles of Association, amendment of 27 June 1883, p. 47.

> 40 per cent bonus shares in a baby mill, the Titaghur, floated in 1883, which has grown to rive its father's bonnet.[10]

The formation of the Titaghur Co coincided with the launching of Thomas Duff & Co as a Calcutta managing agency, replacing Schoene, Kilburn & Co, which had acted as agents for the Samnuggur Co in Calcutta.[11] Thomas Duff & Co's was formed as a private limited company in Dundee, with a directorate composed of the senior directors of the Samnuggur Co. During this period, the directors of Samnuggur Co lost a protracted legal battle to prevent the construction of the Victoria Co in the same vicinity. The Victoria Co had been set up by a rival group of shareholders from Dundee but their legal victory was a pyrrhic one; in 1888, they concluded an agreement handing over the management of Victoria to Thomas Duff & Co.[12] In the 1880s, Thomas Duff & Co became enthusiastic supporters of the short-time agreements organised by the IJMA, and played a prominent role within the Association.

As trading conditions improved at the beginning of the 1890s, short time working was jettisoned and a renewed period of the expansion of productive capacity ensued, which was sustained, more or less, up to the beginning of the First World War. The loom capacity of the mills managed by Thomas Duff & Co increased from 200 in 1876 to nearly 5,000 by 1920, five times that of Cox Brothers in Dundee.[13] Thomas Duff & Co were particularly effective amongst the Calcutta mills in developing new markets which permitted them to pioneer a higher gearing towards hessian production, constituting 60% of looms by 1905.[14]

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[10] Wallace, *The Romance of Jute, p.* 37.

[11] MS 86/1/1/1, Samnuggur Co, MOTD, 22 May 1883, p. 256.

[12] MS 86/5/1/1, Thomas Duff & Co, MOTD, 31 Oct 1888, p. 47.

[13] For Cox Brothers, see Mark Watson, "Jute Manufacturing: A Study of Camperdown Works, Dundee", *Industrial Archaeology Review*, 10.2, Spring 1988, pp. 175-192, and in Mark Watson, *Jute and Flax Mills in Dundee* (Tayport, 1990), pp. 139-143.

[14] Watson, ibid.

Table 3.1: Thomas Duff & Co, Growth of Productive Capacity, Total Looms.

Year	Samnuggur	Titaghur	Victoria	Total	Hessian %
1876	200			200	0%
1880	313			313	45%
1885	415	250		665	29%
1890	458	260	168	886	22%
1895	560	425	374	1,359	37%
1900	560	779	600	1,939	49%
1905	922	780	937	2,639	60%
1910	943	1,718	1,053	3,714	64%
1915	1,572	1,718	1,053	4,343	66%
1920	1,952	1,718	1,053	4,723	68%

Sources: Statements of Calcutta looms, Dundee Yearbook; IJMA Annual Reports from 1905.

The structure of the group of companies remained formally unchanged from 1883 with the inception of Thomas Duff & Co up to 1918, although this masked important incremental trends in the content of the principal-agent relationships, and in the distribution of shareholdings. These quantitative changes assumed a critical mass which led to the qualitative transformation of the relationship with the Victoria Co in 1918 with the signing of a new agency agreement, and changes in its directorate, which formally absorbed it into the Thomas Duff & Co group and did away with its remaining autonomy, as embodied by the different personnel of its Dundee directors up to that point.[15]

Therefore, the evolution of the firm ensured that the firm's Dundonian identity was preserved. The career track from general manager in Calcutta to a seat on the board in the Dundee ensured that the managerial hierarchy that was developed became highly functional to reproducing strategic direction from Dundee, with periodic infusions of new blood from Calcutta. The promotion of general managers from Calcutta was supplemented by the incorporation into the directorate of the founders of R Sim & Co, of Naraingunge, the firm's principal suppliers of raw jute, Robert Sim and John Smith, William Smith's brother.[16] This

[15] UDA, MS 86/5/1/3, Thomas Duff & Co, p. 357, MOTD, 5 Feb, 1918; MS 86/2/1/4, Victoria Co, p. 18, MOTD, Shareholders' AGM, 10 May 1918.

[16] MS 86/1/1/6, Samnuggur Co, p. 64, Minute of AGM, 8 Mar 1899; MS 86/1/1/8, Samnuggur Co, p. 141, Minute of AGM, 5 Mar 1902.

managerial hierarchy was important because it was compatible with the firm's success at developing a stable base of shareholders in Dundee, whose loyalty and passivity was secured by the payment of consistently high returns. This was demonstrated by the attachment of the directors to retaining their Dundee headquarters in the face of adverse changes in corporate taxation, which saw the firm become subjected first to double taxation in India and the UK in 1902, then to excess profits duty during wartime that the Calcutta mills escaped for several years.[17] These changes in taxation drove most of the London- and Glasgow-based Sterling mills to relist as rupee companies with a significant realignment of their shareholding base to the Calcutta capital market.[18]

While Chapter 2 considered the comparative performance of the Calcutta mills, it is salient here to consider the performance of the Thomas Duff & Co group of firms compared to rival firms seeking investment funds in the Dundee capital market. Table 3.2 compares the performance of the Samnuggur & Titaghur Cos with two of the biggest jute manufacturers in Dundee, Cox Brothers and Gilroy, Sons & Co Ltd. Cox Brothers transformed itself from a family partnership to a private limited liability company in 1894 and was not really a competitor in the Dundee capital market until the floatation of the Jute Industries combine in 1920 but serves as a proxy representing the best returns available to jute manufacturers in Dundee during the period from 1875. Gilroy, Sons & Co Ltd was publicly listed as early as 1891.

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[17] MS 86/5/1/2, Thomas Duff & Co, p. 194, 5 Nov 1902, p. 198, 23 Dec 1902; MS 86/1/1/15, Samnuggur Co, p. 479, 30 Nov 1915.

[18] *Investor's India Year-Book*, 1922 (Calcutta, 1922), Chapter on Jute, pp. 153-190.

Table 3.2: Comparison of capital* invested, net profits and long term profitability of Thomas Duff mills, (Samnuggur & Titaghur), relative to leading Dundee manufacturers, Cox Bros and Gilroy, Sons & Co Ltd (current prices), 1876-1913. – denotes missing data.

Year	*Estimates of capital invested, £, 000s			Net profits, £, 000s			Profitability, net profits, % return on capital invested			Total dividends, %	
	Cox	Gilroy	Duff	Cox	Gilroy	Duff	Cox	Gilroy	Duff	Gilroy	Duff
1876	*693*	-	84	24	-	16	3%	-	19%	-	15%
1877	*693*	-	121	8	-	30	1%	-	25%	-	15%
1878	*693*	-	150	36	-	31	5%	-	21%	-	15%
1879	*693*	-	150	12	-	22	2%	-	15%	-	10%
1880	*693*	-	150	54	-	37	8%	-	25%	-	15%
1881	*693*	-	150	66	-	60	10%	-	40%	-	15%
1882	693	-	150	45	-	71	7%	-	47%	-	20%
1883	*693*	-	150	62	-	37	9%	-	24%	-	15%
1884	*693*	-	298	93	-	-1	13%	-	0%	-	0%
1885	*693*	-	305	43	-	-3	6%	-	-1%	-	0%
1886	*693*	-	305	29	-	1	4%	-	0%	-	0%
1887	*693*	-	317	42	-	42	6%	-	13%	-	8%
1888	*693*	-	324	55	-	70	8%	-	22%	-	14%
1889	*693*	-	328	90	-	53	13%	-	16%	-	10%
1890	*693*	-	328	70	-	48	10%	-	15%	-	10%
1891	*693*	325	349	12	25	68	2%	8%	19%	8%	12%
1892	*693*	325	363	58	38	46	8%	12%	13%	8%	9%
1893	*693*	325	391	15	-9	42	2%	-3%	11%	3%	7%
1894	*693*	325	397	38	-18	35	5%	-5%	9%	2%	6%
1895	-	325	472	-	6	70	-	2%	15%	1%	11%
1896	-	325	553	-	25	37	-	8%	7%	3%	5%
1897	-	325	532	-	4	48	-	1%	9%	3%	6%
1898	-	325	591	-	7	80	-	2%	14%	3%	9%
1899	-	325	594	-	10	84	-	3%	14%	3%	9%
1900	-	325	610	-	96	86	-	29%	14%	23%	9%
1901	-	325	612	-	7	109	-	2%	18%	4%	9%
1902	-	325	733	-	3	99	-	1%	14%	3%	9%
1903	-	325	739	-	3	73	-	1%	10%	3%	7%
1904	-	325	743	-	-12	104	-	-4%	14%	1%	9%
1905	-	325	927	-	1	111	-	0%	12%	1%	8%
1906	-	325	1,101	-	16	121	-	5%	11%	5%	8%
1907	-	325	1,155	-	15	196	-	5%	17%	5%	9%
1908	-	325	1,180	-	-6	197	-	-2%	17%	1%	9%
1909	-	325	1,186	-	-6	147	-	-2%	12%	1%	9%
1910	-	325	1,190	-	-6	101	-	-2%	9%	1%	9%
1911	-	325	1,196	-	-6	85	-	-2%	7%	1%	9%
1912	-	325	1,199	-	14	207	-	4%	17%	1%	10%
1913	-	325	1,421	-	17	272	-	5%	19%	5%	12%

Sources: * Estimate of Cox Bros' capital is based on 1893 figure for the partners' combined capital. This seems a reasonable approximation as loom capacity was virtually unchanged in the period 1876-93, according to Mark Watson, Jute and Flax Mills in Dundee (Tayport, 1990), Chapter 7. The figures for Gilroy and Duff are based on total capital invested in the form of equity and debentures, which approximates well to investment in fixed capital or "block" – land, buildings and machinery.

UDA, MS 66/2/2/1, p.369; letter from Cox Brothers, Dundee, Letter book, 1869-94; UDA, MS 134-1-138, Lennox, p 138, Balance Sheet of Gilroy, Sons & Co Ltd, 1891-1905, MS 95-12-3 (5c), Gilroy Sons & Co Ltd, Directors' Report 1913; MS 95-12-3 (8a), Gilroy Sons & Co Ltd, Report 1915; MS 86/1/1 Samnuggur Co and MS 86/3/1 Titaghur Co, MOTD, also MS 86/1/1/9, MS 86/1/5/1-18 Samnuggur Co and MS 86/3/5/5/1-23 Titaghur Co, Annual Reports & Balance Sheets.

The table demonstrates that the Thomas Duff & Co mills were much more profitable than the two Dundee firms. For the period 1876-94, Cox Brothers' averaged net profits relative to capital invested of 6%, or a third of the combined result of 17% for the Samnuggur Co and Titaghur Co. Coxes' profits averaged £44,000 - compared to £37,000 for Samnuggur and Titaghur on a much smaller invested capital. For the period 1891-1913, Gilroy, Sons & Co Ltd average profitability was 3%, compared to 14% for Samnuggur and Titaghur. This was reflected in the rate of return to shareholders, 4% for Gilroys, compared to 9% for Samnuggur and Titaghur. Thus, Gilroys was frequently in arrears in meeting the dividend on their 6% preference shares and only paid out an ordinary dividend in three years during this period, while their investment in fixed capital stagnated. Meanwhile, Samnuggur and Titaghur were able to secure a stable and high return to their shareholders on a capital that had increased from being approximately the same size as Gilroys in 1891 to one over four times as large in 1913.

The Samnuggur Co - Pioneer of Export Markets?

Data detailing the distribution of sales amongst the Calcutta mills in different markets could not be obtained for this early period of the industry's development.[19] What evidence exists to support Wallace's contention that the Samnuggur directors pioneered the industry's breakthrough into key export markets such as the trades for Australian cornsacks and

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[19] The available annual *Report of the Committee* of the Indian Jute Mills Association from 1904 were consulted by the author at the Bengal Chamber of Commerce in December 2011. From 1908, these reports republish a series collated by the gunny broker HC Bose, "Actual Clearances of Jute Fabrics to all places during 12 months ending December" that details the shippers' share contracted for in the Calcutta market, which gives an indirect indication of the share of different managing agents in various markets. It is unclear whether earlier IJMA reports published similar data. However, even the later data appear to exclude direct sales made overseas. Thomas Duff & Co only appears as a shipper during the war years, presumably due to the exigencies of booking freight, which was rationed between producers at this time.

Californian wheatbags?[20] As has been detailed above, Joseph Barrie brought to the Samnuggur directorate a family tie to Charles Barrie and William Ovenstone, ships' captains with extensive knowledge of the Calcutta trade and of the shipping business pioneered by Gilroys as an extension of its jute manufacturing operations in Dundee, which encompassed the routes linking Calcutta, Dundee, Australia, New York and San Francisco. Table 3.3 below collates information given in the minutes of the directors about trading relationships established from Dundee during the first few years of the firm's operations. The year given indicates the first instance of a trading relationship being established with a particular merchant.

Table 3.3: Transactions arranged by the Dundee directors of Samnuggur with merchants in export markets, 1875-80.

Year	**Firm**	**UK Branch**	**Market**	**Product Lines**
1875	John Blyth	London	Melbourne	Cornsacks
1876	James Duncan	Dundee	New York	Hessians
1876	R&D Lamb	Dundee	New York	Hessians
1877	James F White	Dundee	New York	Hessians
1877	John L Lowson	Dundee	New York	Hessians
1877	D&J Fowler	London	Adelaide	Cornsacks, bran bags
1877	Pearson		Adelaide	
1878	Learmonth, Dickinson		Sydney	Cornsacks
1879	Thomas Anderson	London	Melbourne	Woolpacks
1879	A&J Nicoll	Dundee	Dundee	
1879	John A Lowson	Arbroath	Adelaide	Woolpacks
1880	James Duncan	Dundee	New York	Hessians
1880	J & AD Grimond	Dundee	New York	Hessians
1880	D&W Murray	London	Adelaide	Woolpacks
1880	A&J Nicoll	Dundee	Australia?	Woolpacks

Source: MS 86/1/1/1 Samnuggur Co, MOTD.

Once a trading relationship was established, this generally led to repeat transactions, although D&J Fowler & Co in Adelaide and Duncan, White and Lamb in New York appear to have been by far the most important trading partners. San Francisco is notable for its absence as a destination market that was established from Dundee. This is unsurprising as the orders arranged by the Dundee directors functioned to supplement sales made by the firm's Calcutta agents, Schoene, Kilburn & Co. As San Francisco was a new market and shipments there from

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[20] Wallace, *The Romance of Jute*, pp. 26-37.

Calcutta traversed the Pacific - rather than the Atlantic as was the case for Dundee shipments – this trade would have to be established from Calcutta. What is interesting about the trading relationships listed in Table 3.3 is that they demonstrate the way in which the Dundee directors were able to capture and utilise location specific commercial knowledge generated in Dundee to develop their Calcutta business. Nearly all of the merchants listed had established their operations in Australia and New York from a base in Dundee or the surrounding area. The only exceptions are Pearson, whose principals could not be identified and the Learmonths, who were large landowners in Australia, England and Scotland, who came from Stirlingshire. Moreover, in most cases, their business as merchants in the destination market dwarfed any residual link to manufacturing in Dundee. The exceptions were John A Lowson, whose business was obtained through Andrew Lowson, an Arbroath manufacturer, and Grimonds, who were large manufacturers at the Maxwelltown Works in Dundee. This meant that most of the trading partners were unconstrained by loyalty to Dundee – or a formal trading relationship as a subsidiary to a Dundee business - and were ready to do business that would undercut Dundee.

The most important trading relationship in Table 3.3 was with D&J Fowler of Adelaide in the product line for Australian cornsacks which would become a perennial staple of Calcutta's export business.[21] The closeness of the relationship that developed was attested to both by its longevity, and by the fact that they were later given the formal appellation of "friends" – reserved for networked firms – when referred to in the minutes of the directors.[22] By 1879, the frequency of transacting had led to the relationship being formalised in a joint venture, although this was not a typical mode of conducting business.[23]

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[21] See IJMA, *Report of the Committee*, 1913, (Calcutta, 1914), p. 254, Statement XX, which shows that cornsacks and woolpacks remained the dominant product lines in sacking right up to 1913 - and Australia the dominant source of demand in these lines.

[22] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 224, 8 Dec 1897.

[23] MS 86/1/1/1, Samnuggur Co, MOTD, p. 161, 30 Jun 1879.

The recent sales of cornsacks to Messrs D & J Fowler i.e. 1000 bales for “Star of Albion” [...], 1000 bales for later ship [...], was unanimously approved of and it was decided to confirm the joint interest of the company in the business, 5% being the minimum charge for commission and guarantee in the event of the venture resulting in a loss.

The importance to the firm of developing the Australian business is indicated by frequent references in their minutes to this area of work under the dedicated heading “Australian correspondence”, which also suggests that they employed Fowlers or other merchants as agents to look for opportunities to expand the business.[24] In 1887, the deputy general manager in Calcutta, George Nairn made a special visit to Australia, with limited success:

> Nairn’s trip so far has been very disappointing. I have long been wondering why there were no telegrams from him asking quotations, and am surprised this morning to have a message from Colombo. He must have left Australia earlier than he at one time intended.[25]

The discussion of transactions with New York is rather different in character. While trade to Australia seems to have become a core part of the business at an early stage, the New York market was Dundee’s most important established market, where the Dundee manufacturers enjoyed a substantial competitive advantage in freight costs relative to Calcutta. The transactions to New York referred to include completed sales of goods but also refer to frequent shipments on a consignment basis - "in the event of [the Calcutta agents] being short of orders" - to the New York merchants, who acted as agents on Samnuggur’s behalf in seeking to make sales in order to establish a reputation on the basis of price and quality for Calcutta goods there.[26] The trading relationship with James Duncan – later renowned in Dundee for his wealth and the bequest of the Duncan of Jordanstone institution for technical education – was

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[24] MS 86/5/1/1, Thomas Duff & Co, p. 221, 10 Nov 1897.

[25] MS 86/V/7/1a, Letters from William Smith, Calcutta, to Dundee, 23 Apr 1887. A further trip was made by Nairn in 1889; “It was also agreed to refund Mr Nairn the sum of £118-5, being the amount of his expenses in connection with his visit to Australia.” MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 65, 24 Sep 1889.

[26] MS 86/1/1/1, Samnuggur Co, MOTD, p. 101, 9 Oct 1877.

a close and lasting one. Duncan became a substantial shareholder in the Samnuggur and Titaghur Cos.[27] The New York transactions refer to "hessians" generally but it is not clear whether this referred mainly to the hessian cloth that was the main product line sold to the Eastern Seaboard throughout the period of study. It is possible that these orders included San Francisco wheatbags and that the trade in this product line commenced as an extension of the New York trade before San Francisco established direct shipping connections with Calcutta and Dundee. The lack of references to San Francisco in the Dundee directors' minutes does not discount Wallace's hypothesis about the importance of Samnuggur in developing this vital product line for the Calcutta industry.[28] A minute from May, 1876, states "Mr W[illiam] Smith presently with the Messrs. Cox Brothers here was engaged as commercial assistant to the managing agents at Calcutta for three years" on a competitive basic salary of Rs700 a month and an additional performance-based "commission of 2½ % on the dividends paid to the shareholders, with free quarters at Samnuggur".[29] Thus, the terms of the Samnuggur Co's agreement with Schoene, Kilburn & Co to act as their managing agents in Calcutta permitted them to recruit their own agent to work in the managing agents' office there. Smith's obituary observes that he "served his apprenticeship in the offices of Messrs Cox Brothers, and, by dint of special aptitude and ability, rose to the important position of confidential assistant to the late Mr Thomas H Cox."[30] Smith would certainly have learnt about the American market in this role; Thomas H Cox's letters frequently refer to such matters during the period that Smith worked for him.[31] It is therefore plausible that he was in a position to use this knowledge to

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[27] Lists of share issues in MS 86/1/1/1, Samnuggur Co, Minute of Emergency Special General Meeting, pp. 261-6, 27 Jun 1883; MS 86/3/1/4, Titaghur Co, MOTD, pp. 416-21, 19 May 1897.

[28] The first specific reference to "Friscos" appears only in 1885 in the Dundee minutes, MS 86/1/1/2, Samnuggur Co, p. 61 4 Nov 1885

[29] MS 86/1/1/1, Samnuggur Co, p. 35. 16 May 1876.

[30] Thomas H Cox was the senior partner of the firm. "Death of Calcutta Jute Manager", *Dundee Courier*, 8 Jul 1893.

[31] The personal connection is confirmed by a private letter of Smith from Calcutta: "I met Mr Thomas [Cox] and Mr Sharp at – don't start – the races on Saturday afternoon and had a long chat with them.

develop a connection between Calcutta and San Francisco, possibly using Charles Barrie's and William Ovenstone's shipping connections with that port.

Some of William Smith's correspondence concerning commercial matters in Calcutta to the directors in Dundee has survived from the period from 1887 to 1890 – particularly for a few months in 1890 – when there was intense price competition between Calcutta mills in obtaining export orders. His observations corroborate the argument that Thomas & Duff & Co's mills had developed an advantage in export markets relative to the other Calcutta mills. In August, 1890, he refers to the fact that "Fowlers have evidently bought their 1000 bales past us", referring to the erosion of the established relationship with D&J Fowler, and went on to observe:

> Please bear in mind that it is an absolute necessity for us to retain our Australian connection, and not lose one. As I have said buyers here naturally discriminate against us, being their strongest opponents, and we must in a manner be independent of local Australian orders [i.e. purchases in Calcutta for export]. I don't say but that we shall get a big share, as our influence with brokers is very strong, but we must not allow ourselves to be cut out in Australia and be reduced to the position of depending on local orders alone. This would never do.[32]

As well as indicating the position of Thomas Duff & Co's mills in export markets, this quotation is interesting because it indicates that the firm was making direct sales in competition with orders placed in Calcutta. Evidence is scarce to demonstrate how the mechanism for direct sales operated, but data collected in relation to Charles Barrie's activities as a shipping agent in Dundee suggests that this would have been the most plausible route by which direct sales were made.

They visit us tomorrow. Mr Thomas is turning very old in appearance. He was most cordial, and seemed pleased & delighted to see me." MS 86/V/7/1a, Thomas Duff & Co, Private official letters from Calcutta, 1888-1890; private letter from William Smith to David Stewart, Secretary of Thomas Duff & Co., Dundee, 27th December, 1887.

[32] MS 86/V/7/1a, Letters from William Smith, Calcutta, to Dundee, 10 Aug 1890.

Table 3.4 below demonstrates that Barrie developed a substantial business as an agent earning commission on shipments of raw jute from Calcutta to Dundee from 1883. The table is broken down by purchaser, ranked in descending order by the size of the average order of jute in bales. The biggest 12 purchasers are given, followed by selected purchasers - Luke, Nicoll, Wybrants, Barrie, Robertson, Smith of Alyth - who were also directors of Samnuggur, Titaghur and Victoria, indicating the existence of informal networking relationships. The rank order is also given for total purchases and for the frequency of transactions. It is notable that Joseph Barrie, (in bold in the table), ranked seventh in terms of frequency of transactions, out of all proportion to his market share. This suggests that there was an informal networked relationship between the brothers, which is supported by the information presented about his later shareholdings in Barrie's own ships.

Table 3.4: Charles Barrie agency ships, transactions with Dundee jute merchants & manufacturers, 1883-1900, selected, in descending order by average bales purchased.

Name	Ave bales	No of trans-actions	Total bales	Ave bales rank	No of trans-actions rank	Total bales rank
Ralli Bros agency	2,548	9	22,936	1	46	7
Gilroy, Sons & Co Ltd	2,298	17	39,074	2	18	3
Cox Bros Ltd	2,087	22	45,904	3	11	1
J & AD Grimond	1,863	24	44,706	4	8	2
Baxter Bros & Co Ltd	1,731	16	27,692	5	22	5
Alexander Gibson Morgan	1,454	5	7,268	6	67	39
John Sharp & Sons	1,423	13	18,499	7	32	11
TS Ross & Co	1,299	14	18,183	8	29	13
Henry Smith & Co	1,244	18	22,398	9	16	8
Kinmond, Luke & Co	1,167	10	11,673	10	42	23
Fleming, Douglas & Co	1,157	26	30,080	11	4	4
JA Luke	1,150	3	3,450	12	78	61
A&J Nicoll	817	10	8,167	25	43	32
DW Wybrants & Co	790	14	11,064	28	31	24
JJ Barrie & Co	**665**	**25**	**16,631**	**37**	**7**	**14**
James Robertson & Co Ltd	533	6	3,198	47	63	63
David Smith & Sons, Alyth	411	11	4,525	68	41	53

Source; "Goods entered at Custom House Yesterday", *Dundee Courier.*

By the late 1890s, Barrie's agency business comprised a significant proportion of the jute imported into Dundee, as shown in Table 3.5.

Table 3.5: Charles Barrie, agency business for jute imported to Dundee from Calcutta.

Season	Ships	Barrie-owned Ships	Total bales	% total jute exports to UK
1893-94	4		57,012	3.7%
1894-95	3		59,080	3.3%
1895-96	5	1	104,695	5.2%
1896-97	9		178,260	10.0%
1897-98	11	1	228,008	10.8%
1898-99	5	1	84,950	6.1%

Source; "Latest Movements of Dundee Jute Fleet", *Dundee Courier*. Figures for jute exports calculated from IJMA, *Report of the Committee,* 1908, Statement X, "Exports of Jute... " collated by HC Bose , p172.

Barrie's agency business would have generated information beyond the raw jute market, as ships in the Calcutta trade did not simply make a round trip between Dundee and Calcutta, but also traded with Calcutta's export markets. The infrequency with which his own fleet of ships traded in raw jute may indicate that he was also trading in jute manufactures. There is also more direct evidence of Barrie's and other shippers' connection to Thomas Duff & Co.

A letter from Smith in 1890 seeks to develop the shipping connection in Calcutta with respect to agency business that must have been a spin off from connections established through direct sales of manufactures:

> "Loch Line". You will see we have their third steamer fixed, and very probably will have the fourth before the season closes. Now this business pays, and at same time is easy and light for our staff, and also gives us a good position in the market. Could you not increase this line of business? And could Mr Barrie not be influenced to send all his ships consigned to us, or rather make us agents for his ships exactly the same way as the Loch Line people are doing, and evidently they are very well pleased with our services.[33]

[33] MS 86/V/7/1a, Letters from William Smith, Calcutta, to Dundee, 27 Oct 1890.

An informal relationship developed later with Charles Barrie to provide credit facilities to his Den line of steamers in Calcutta: "[The] Calcutta office had paid about £1250 on behalf of the steamer "Den of Ogil" belonging to this firm [Charles Barrie & Son], and it was reported that they [Charles Barrie & Son] had refunded this amount at the office here.[34] Charles Barrie was one of the most frequent attendees at Annual General Meetings of the shareholders of the Samnuggur and Titaghur Cos from 1895 and he was given a stake as a shareholder in Thomas Duff & Co from 1901.[35]

Another example of the importance of the Barrie-Ovenstone shipping network to Thomas Duff & Co as a source of commercial information was the introduction they received to John Darling & Co, who became their most important Australian trading partner, in the late 1880s. The introduction was made through the Barries' brother-in-law William Ovenstone; "It was agreed to pay Captain Ovenstone a further sum of £150 in full of honorarium for having been the means of introducing the business of Messrs John Darling & Sons to the Company."[36]

A final observation relating to the information in the table above is that the Nicolls placed two orders during this period. This is suggestive in that Thomas Duff & Co were later quite successful at using their Dundee contacts to enter the UK market, according to HC Bose's data in the annual reports of the IJMA.[37] However, sales to the UK were not systematic in this earlier period and the 1880 order was specifically for "Australian woolpacks".[38] It is therefore more likely that the Nicolls occasionally drew on their Samnuggur connection to make up shortfalls in their own output to meet orders. Later references to purchases by JJ Barrie & Co

[34] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 198, 23 Dec 1902.

[35] MS 86/5/1/2, Thomas Duff & Co, MOTD, 27 Mar 1901, p. 121.

[36] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 65, 24 Sep 1889.

[37] Thomas Duff & Co ranked second only to Bird, with a 11% share of exports to the UK market in 1917, when the circumstances of the war entailed them shipping goods on their own account, H.C. Bose & Co, "Actual Clearances of Jute Fabrics to all Places in the Six Months to End of June 1917", published in IJMA, *Report of the Committee*, 1917, p. 283.

[38] MS 86/1/1/1, Samnuggur Co, MOTD, 3 Jun 1880, p. 188.

were probably initially of a similar nature. In terms of new markets not referred to by Wallace, a flurry of correspondence around 1883 indicates that Thomas Duff & Co made an early entry into the Egyptian market using merchant intermediaries with a Dundee branch office such as Moore & Weinberg.[39]

3.2 The Making of a Managing Agency; From the Samnuggur Co to Thomas Duff & Co, 1874-88.

As indicated above, the firm structure only assumed its mature form in 1888 when, Thomas Duff & Co gained the agency business of the Victoria Co. The firm structure from 1888 remained essentially unchanged up to 1918, when the Victoria Co was effectively absorbed as an independent entity into the Thomas Duff group, as their directorates, managerial hierarchy and shareholders became indistinguishable. In the period from 1874 to 1888, on the other hand, substantial changes were made in the firm structure. A new mill company, the Titaghur Co, was formed in 1883 and the learning process of the Samnuggur directors from 1874 culminated in their decision to jettison the agency agreement with Schoene, Kilburn & Co, in order to manager Samnuggur and Titaghur themselves through their own managing agency, Thomas Duff & Co. The latter gained its first external business in 1888 when the directors of its Dundee rival, the Victoria Co, handed over the agency for running the business in Calcutta.

Although it is not intended to pre-empt the more detailed discussion of the long term evolution of the firm's capital structure and the composition of the firm's shareholders that follows, it is pertinent here to examine who the original shareholders of the Samnuggur Co

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[39] MS 86/1/1/1, Samnuggur Co, MOTD, 5 Nov 1884, p. 403.

were. Shares of a nominal value of £121,200 were issued in 1874, which was increased to £150,000 at the end of 1876, and fully paid up by 1878.

Table 3.6: Original shareholders of the Samnuggur Co, 1876.

Shareholders	£100 shares	Share
"British Register"		
Thomas Duff	495	33%
Alexander Nicoll	332	22%
Joseph J Barrie	173	12%
James Nicoll	62	4%
William Mair	50	3%
William Moir	37	2%
Andrew Hendry	25	2%
John Whytock	25	2%
David Halley	12	1%
Peter Will	6	0.4%
William Milne	6	0.4%
Charles Kilburn & Henry Ward Kilburn	5	0.3%
Edward Dunbar Kilburn & Francis Kilburn	4	0.3%
Reverend James Mackay	4	0.3%
John Alexander	2	0.1%
"Indian Register"		
Edward Dunbar Kilburn	45	3%
Charles Kilburn	27	2%
Henry Francis Brown	25	2%
Executors Walter R Brown	25	2%
James Robertson	50	3%
Alexander Mair	35	2%
G[eorge] J[ameson] Scott	19	1%
John Alexander	20	1%
George Alexander	11	1%
Robert Frain	2	0.1%
Mr [William] Doig	2	0.1%
Alexander Cook	1	0.1%
British Register	**1238**	**83%**
Indian Register	**262**	**17%**
Total	**1500**	**100%**

Source: MS 86/1/1/1, Samnuggur Co, MOTD, 19 Dec 1876, p 60.

Samnuggur remained in essence a private company despite taking the form of a public limited company - nearly all of the firm's 27 shareholders were "insiders" with a direct business relationship to the company. The four directors Duff, Barrie and the Nicolls together controlled 73% of the equity. 9% were taken up by the Kilburns and the Browns, partners in the managing agents Schoene, Kilburn & Co.[40] A further 9% were held by employees of the firm. William Moir was the firm's banker as Dundee agent of the Bank of Scotland and later joined the directorate. Andrew Hendry was the firm's solicitor. John Whytock was a Dundee jeweller and Alex Nicoll's brother-in-law.[41] David Halley was a former business partner of Joseph Barrie and, as the founder of the Dundee stock exchange from 1879, probably acted as a broker in share transfers as a market developed for them.[42] Peter Will's occupation is given in the Dundee Directory as "clerk, Ward Works", the Nicolls' Dundee mill. William Milne worked as a commercial assistant to Joseph Barrie, who acted as Secretary as well as a director of the new firm.[43] The Reverend Mackay was a Minister of St Clements – the "Steeple" Church - on the Nethergate, and the uncle of William Smith, the Calcutta general manager.[44] George Jameson Scott was a ship's captain in Calcutta, the secretary of the India General Steam Navigation Co, and an intimate of the Bird brothers who formed Bird & Co, later becoming the first Chairman of their Union Jute Co.[45] He probably had a business connection with Duff from the latter's time at Barnagore in the early 1860s. William Doig, the brothers William and Alex Mair, John

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[40] At its formation, the Samnuggur Co listed Charles Kilburn as a director, which is interesting in that it suggests that the principals in Dundee commenced the venture with an open mind as to the firm's Dundonian or Indian identity and may have envisaged a more expansive role in the firm for the managing agents in Calcutta. In the event, Kilburn never attended a meeting of the directors and his directorship lapsed under the articles of association when he wasn't issued with sufficient shares to qualify as a director. Another indication of this strategic openness is given by the presentation of the shareholder register with a distinctive classification for the Indian shareholders. This was rapidly dropped as the shareholder base of the firm expanded with Dundee providing the core of shareholders. On Kilburn's directorship, see MS 86/1/1/1 Samnuggur Co, MOTD, p. 43, 2 Aug 1876.

[41] John and Isabella Whytock, 1861 Census, Household Enumerator, Dundee Parish, ED 24, p. 7, Roll CSSCT1861_39. John Whytock, Inventory, SC 45/31/57, pp. 405-409, registered at Dundee Sheriff Court, 26 Sep 1905, lists Alex Nicoll as his executor.

[42] David Halley was listed in the Dundee Directory 1874-75 as a stockbroker in the firm of Halley & Yeaman, and , from 1876-77 onwards as a stockbroker working on his own account with a business address at 3 Royal Exchange Place. For the Dundee Stock Exchange, see R.C. Michie, *Money, Mania and Markets: Investment, Company Formation and the Stock Exchange in Nineteenth-Century Scotland* (Edinburgh, 1981)

[43] Dundee Directory 1874-75 (Dundee, 1874), p. 269.

[44] Reverend James Mackay, 1871 Census, Household Enumerator, St Andrew Parish, ED 35, p. 39; Roll CSSCT1871_53; Dundee Directory 1871-72, individual listing, p. 151; "Marriages", *Dundee Courier*, 8 Aug 1889.

[45] Harrison, Bird & Co, pp. 30-31.

Alexander and his son George were all skilled engineers or jute mill managers who had worked or continued to work in Calcutta and were connected to Duff through employment erecting and operating the Barnagore jute mill under his management.[46] Similarly, Robert Frain, James Robertson and Alex Cook were recruited from Dundee to manage the new mill.[47] Although no definitive list of the Samnuggur's assistants from the time was obtainable, the placing of Doig and the Alexanders on the Indian register suggests that Duff was able to call on his old Calcutta connections to obtain the skills required to construct the new mill and to train the labour force in its first years of operation.[48]

Most of the initial shareholders remained interested in the company and, as the equity grew to finance growth, their family members also took substantial shareholdings. It can be inferred that the hybrid nature of Samnuggur's origins, understood in institutional terms, provided a stable structure. The Samnuggur Co was innovative in the Dundee business environment in the sense that it was one of the earliest jute manufacturers to adopt the 'plc' form of company structure. However, this was the typical structure adopted for a whole class of foreign investments emanating from Dundee at this time, both in shipping and in the investment trusts operating in North America. In the case of Samnuggur, the plc form served the function of pooling the surplus investment funds required to construct a jute mill to a minimum efficient scale in Calcutta. The scale of investment required was too large to be met by any one individual or family. On the other hand, the content of the business relationships embodied in Samnuggur as a public limited company still bore all the hallmarks of the "family capitalism" which was the typical company form in the Dundee business environment from which it emerged. The original investors in Samnuggur all had close family ties – or ties of loyalty and

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[46] "Letter to the editor. A Worthy Dundonian.", 25 Aug 1896, p. 4; "Births, Marriages and Deaths", *Dundee Advertiser*, 6 Apr 1864, p. 5; "Gilfillan Testimonial, Second Subscription List", Dundee Evening Telegraph, 5 Oct 1877, p. 1; "Births, Marriages and Deaths", *Dundee Courier*, 18 Nov 1907, p. 8.

[47] MS 86/1/1/1, p. 7, p. 11, 16.

[48] MS 86/1/1/1, p. 60.

trust based on employment relationships or repeated contracting. The social class and occupational background of a minority the shareholders is distinctive in its plebeian character, involving engineers and supervisory grades with an expertise in jute manufacturing. As discussed in more detail below, this became more pronounced over time.

By the time the Titaghur Co was formed in 1883 by the issue of 70% bonus shares to the Samnuggur shareholders, the number of shareholders in the latter had only expanded from 27 in 1876 to 46. The Titaghur bonus shares were issued in £10 denominations, and Samnuggur shares were reclassified from £100 to £10 when additional share capital was called up in 1891.[49]

The *additional* shareholders are shown in the Table 3.7 below.

Table 3.7: Samnuggur shareholders in 1883 and bonus shares issued in Titaghur Co.

New shareholder	Samnuggur £100 shares	Titaghur £10 bonus shares	% of company equity
Robert Lowson Watson	45	315	3%
William Smith	36	252	2%
Ann McNab Robertson or Lindsay	15	105	1%
James William Kibble	13	91	1%
William Banks	10	70	1%
James Brody Brechin executors	8	56	1%
Isabella Whytock or Nicoll	8	56	1%
Walter William Duff	5	35	0.3%
Alexander Lindsay	5	35	0.3%
Eleanor Whytock	4	28	0.3%
William Mackie	4	28	0.3%
John B[owman] Young	4	28	0.3%
John Macfadyen	3	21	0.2%
Helen Bennet Lennox	3	21	0.2%
Jessie Bennet Lennox	3	21	0.2%
David Mclaren Morrison	2	14	0.1%
Robert Bower Ritchie	2	14	0.1%
Ann Low Barrie	2	14	0.1%
Elizabeth Dargie Barrie	2	14	0.1%
Charles Barrie Ovenstone	2	14	0.1%
Agnes Millar	2	14	0.1%
John Henderson	2	14	0.1%
Alexander Cochrane Scott	1	7	0.1%
Total	**181**	**1267**	**12%**

Source: MS 86/1/1/1, Samnuggur Co, MOTD, p274, 1 Aug 1883.

[49] MS 86/1/1/3, Samnuggur Co, p. 339 24/7/91

In the period since 1876, none of the surviving shareholders had divested. Many of the new shareholders were family members of the existing shareholders, who had had shares transferred to them by their relatives. Ann McNab Lindsay was the sister of the Samnuggur mill manager, James Robertson, who had married the Dundee wholesale confectioner, William Lindsay, of the firm Lindsay & Low.[50] Alex Nicoll's wife and sister-in-law, Isabella and Eleanor, took shareholdings, as did his brother-in-law, James Brody Brechin.[51] The Lennoxes had a brother who was married to the sister of Nicoll's wife.[52] Joseph Barrie transferred shares to his sisters, and to his nephew, who was his business partner in JJ Barrie & Co. New shareholders since the 1876 issue amongst the Samnuggur's employees were William Smith, the newly promoted general manager, and Walter William Duff, the son of Thomas Duff, who had been sent out to the Calcutta office to learn the business.[53] William Mackie was employed by the firm as a consulting engineer in Dundee.[54] James William Kibble, David Mclaren Morrison and John Macfadyen, commercial assistants handling the Samnuggur's business in Schoene, Kilburn's Calcutta office, took shares, conforming to a pattern of cross-shareholding to cement business relationships.[55] Robert Bower Ritchie's shareholding seems not to have been construed as a conflict of interest with his role auditing the firm's sterling accounts.[56] Alexander Cochrane Scott was a mill furnisher with business in India, who later became a director and Chairman of the mill companies. It is unclear whether there was any contracting

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[50] See inventory and will of James Robertson Sr, SC 45/31/30, registered at Dundee Sheriff Court, 24 Mar 1881, pp. 548-555, in which William Lindsay was named an executor. The "Alexander Lindsay" holding 5 shares may have been his father. After his return from Calcutta, James Robertson replaced Lindsay on the board of directors of Lindsay & Low Ltd when he died in 1898; "Lindsay & Low Ltd", *Dundee Courier*, 2 Jun 1898.

[51] See reference to Brechin in inventory of David Nicoll, op cit.

[52] Dundee Census Records, 1871, household enumerators.

[53] Walter William Duff is referred to as "of Calcutta, British India, merchant" in the 1883 Articles of Association of Thomas Duff & Co, MS 86/5/6, 9 Aug 1883.

[54] MS 86/1/1/1, Samnuggur Co, MOTD, p. 238, 12 Jul 82, recounts a visit by Mackie with the directors Alex Nicoll and Thomas Duff to Pearce Brothers "to review progress of engine."

[55] Thacker's Directory, 1879, (Calcutta, 1879), Schoene, Kilburn & Co listing, p. 302.

[56] MS 86/1/1/1, Samnuggur Co, p. 5, Minute of Annual General Meeting, 17 Sep 1874.

relationship between the firm and John Henderson, clerk to the Dundee jute merchant, Peter Matthew, or with Alexander Lindsay, a Dundee merchant.[57] The shares held by Robert Lowson Watson, a wealthy distiller, and William Banks, a wholesale grocer, both local to Dundee, represent the embryo of a local base of shareholders with no direct relationship to the business through contracting or family ties that would ramify very rapidly in the following decade.[58]

It is evident that the ownership of the firm rested on a narrow base during the first years of the firm's existence but that the plc form left open the possibility of canvassing more widely for investible funds in capital markets in the future. However, it should be emphasized that the Articles of Association were drawn up in such a way that the directors had an effective veto on share transfers, preventing the possibility of a challenge to their control occurring through the transfer of shares between non-directors. This is embodied in Article 42:

> The board may decline to register any transfer of shares or stock upon which the company has a lien, and in case of shares, not fully paid up, may decline to register a transfer to any person of whom they do not approve, or who in their opinion is not shown to be a responsible person and that without stating any reason for such declinature.[59]

In order to ensure that this provision was watertight, further Articles were drawn up relating to transfers through marriage. Article 51 stated "Provisions of 42 may apply to male shareholders attempting to acquire effective transfer through marriage". A similar provision applied in article 59 to transfers through inheritance; "Directors have same right to refuse shares acquired through inheritance as with transfers."[60]

[57] *Dundee Directory*, 1884, p. 193, p. 218.
[58] Ibid, p. 109, pp. 335-6.
[59] MS 86/1/6/1, Memorandum and articles of association 1874 with special resolutions, 1883-1919.
[60] Ibid.

The Formation of Thomas Duff & Co.

The launch of Titaghur coincided with the formation of Thomas Duff & Co to replace Schoene, Kilburn & Co as the managing agents responsible for marketing the mills' output in Calcutta. Thomas Duff & Co was formed as a limited liability company with a nominal share capital of £50,000 but was effectively a private company.[61] The company's address was given as 10 Panmure St, Joseph Barrie's business premises in the centre of Dundee, the same as for Samnuggur and Titaghur. The directorate was identical with that of Samnuggur and Titaghur – still the founding directors Duff, Barrie and the Nicolls. Shareholdings were allocated to the firm's chief agents in Calcutta, the general manager William Smith, the mill manager James Robertson, and Thomas Duff's son Walter William. 200 shares of £100 were allocated broadly in proportion with the directors existing stakes in Samnuggur and Titaghur:

Table 3.8: Original shareholders of Thomas Duff & Co, 1883.

Shareholders	**Shares**
Thomas Duff	70
Alexander Nicoll	48
Joseph Johnston Barrie	30
William Smith	20
James Nicoll	12
James Robertson	10
Walter William Duff	10
Total	200

Source: MS 86/5/1/1, Thomas Duff & Co, 30 Aug 1883, p2.

[61] MS 86/V/6, Thomas Duff & Co, Memoranda and Articles of Association, p. 26A. A special resolution of 25 June 1908 amended the Articles in the light of changes in British company law to opt out of the provisions for public limited companies of the Board of Trade order of 30 June 1906 for table A in First Schedule of Companies Act 1862 and stated: "The company is hereby declared to be a private company, the number of members of the company (exclusive of persons who are in the employment of the company) shall not at any time exceed fifty."

The new firm's Articles of Association embodied a 20 year managing agency agreement with Samnuggur and Titaghur, Thomas Duff & Co to be paid a 3% commission on the invoiced sales of the managed mills.[62]

How did Schoene, Kilburn & Co come to be replaced by Thomas Duff & Co? Clearly, it was desirable, from the point of view of the Samnuggur's original directors, that they should capture the income stream being paid to Schoene, Kilburn & Co. Their close attention to the recruitment of William Smith as their agent in Calcutta was consistent with this goal – permitting Smith to acquire the knowledge and contacts over a period of time working in Schoene, Kilburn's Calcutta office that would be necessary to set up a new agency. It appears that Thomas Duff's knowledge of the Calcutta market was insufficient to do this from the outset of the Samnuggur Co's existence. Duff, as manager of the Barnagore mill and the Borneo Co's agent, had been able to rely on the merchanting infrastructure of Hendersons in Calcutta, Glasgow and London. In any case, his knowledge of Calcutta would have been out of date by 1874 in a rapidly changing market.

References in the Samnuggur Co's Minutes of the Directors to the content of the agency agreement with Schoene, Kilburn & Co are rare. Neither the rate of commission paid nor the duration of the agreement was recorded. The Samnuggur Co directors superior knowledge of jute manufacturing was indicated by their close attention to directing their Calcutta agents:

> It was resolved to request the Calcutta agents to give their opinion of the engines after they had been tested etc as a guide as to the ordering of the machinery required for the remaining half of the

[62] For the rate of commission, see MS 86/1/1/7, Samnuggur Co, MOTD, p. 124 17 Oct 1900; MS 86/1/1/7, Samnuggur Co, minute of AGM, p. 215, 6 Mar 1901. MS 86/V/6, Thomas Duff & Co, Memoranda and Articles of Association, Article 3, p. 4: "The company hereby adopts a contract and agreement entered into, of date the 4th day of June 1883, between William Smith, of Calcutta, merchant, on behalf of this then proposed new company on the first part, The Samnuggur Jute Factory Company, Limited, on the second part, and Alexander Nicoll, of Dundee, merchant, on behalf of a then proposed new company to be called the Titaghur Jute Factory Company, Limited, on the third part, whereby this company is appointed managing agents in Calcutta of the said two other companies on the terms stated in the said contract and agreement, which has been or is to be filed along with these articles with the registrar of joint stock companies."

> work. It was also decided to suggest to them what class of goods should be made at the commencement[.][63]

The Samnuggur directors' apparent dissatisfaction with their agents' handling of a land purchase to extend the mill compound was used as a pretext to end the agreement.[64] A year's notice was given by the Samnuggur directors to Schoene, Kilburn & Co, of their intention to terminate the agreement in August, 1881.[65] William Smith assumed power of attorney on behalf of Samnuggur in Calcutta.[66] Schoene, Kilburn's attempts to retain the agency, presumably by offering improved terms, were unsuccessful.[67] This decision was initially justified in terms of economy: "the directors have effected a considerable saving by now having the business of the company conducted at 15 Clive Row by their own staff under the superintendence of Mr William Smith as general manager."[68] It is possible that the terms of the agreement with Schoene, Kilburn & Co were more onerous than the 3% agreed with Thomas Duff & Co. On the other hand, the duplication of the managerial hierarchy entailed in the formation of Thomas Duff & Co may have been hard to justify to prospective shareholders of the Samnuggur Co. This may explain the motivation for the decision to form Titaghur Co as a separate company from Samnuggur although their shareholders and directorate were identical and they were, to all intents and purposes, the same company. By forming two mill companies, it created the illusion of a new managing agency managing multiple mill companies, and a brand identity for Thomas Duff & Co to position itself to take over or create new mill companies in Calcutta in the future.

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[63] MS 86/1/1/1, Samnuggur Co, MOTD, p. 21, 24 Aug 1875.

[64] MS 86/1/1/1, Samnuggur Co, MOTD, p. 117, 25 Mar 1878; "The directors have no hesitation in saying they never imputed any wrong motives to Messrs Schoene Kilburn & Co. in the matter of the purchase of the company's land, but whether their agents gave the care and attention to the company's interest which the company had a right to expect, the directors are scarcely in a position to confirm or contradict. It was decided to send the Calcutta agents an excerpt of this minute accordingly."

[65] MS 86/1/1/1, Samnuggur Co, MOTD, p. 189, 24 Jun 1880.

[66]MS 86/1/1/1, Samnuggur Co, minute of AGM, p. 230, 28 Mar 1882.

[67] MS 86/1/1/1, Samnuggur Co, MOTD, p. 203. 10 Mar 1881.

[68] MS 86/1/1/1, Samnuggur Co, minute of AGM, p. 230, 28 Mar 1882.

The final aspect of the formalisation of a more differentiated managerial hierarchy under the Thomas Duff & Co banner lay in the creation of a separate role for the Company Secretary managing the firm's Dundee office, which Joseph Barrie had combined with his director's responsibilities up to this point. David Stewart, a banker and accountant, had gained seven years experience as assistant to William Mackenzie, Secretary of the Alliance Trust.[69] He acted simultaneously as Secretary to Thomas Duff & Co, the Samnuggur Co and the Titaghur Co, handling all the firm's correspondence with Calcutta with a small team of clerks from the firm's office at 84 Commercial St.[70] While the general manager and his staff in Calcutta became salaried employees of Thomas Duff & Co, the duplication of function in the Dundee office was made apparent through the periodic renegotiation of the distribution of the costs of maintaining it between the three firms. Thomas Duff & Co initially paid the whole costs of maintaining the office but by 1885, the Samnuggur Co had agreed to pay half of "the salaries and general office expenses", Titaghur paying 30%, and Thomas Duff & Co 20%.[71] In 1887, Thomas Duff & Co were at pains to reduce the burden on the managed mills, which had failed to pay a dividend for three years running from 1884-1886. At the Samnuggur AGM, it was noted:

> The commission paid to the managing agents for the past year barely covers the expenses for the management of the mill but as there was a small surplus over from the previous years they have rebated a sum sufficient to allow the directors the minimum fee to which they are entitled under the company's articles for the past year.[72]

Consider what is being said here. The "expenses for the management" would be considered as a normal cost in a more typical firm structure where these would be internalised within the

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[69] "Monifieth Ex-Provost. Death of Mr David Stewart.", obituary, Scotsman, 9 Dec 1931, p. 8.
[70] Dundee Directory 1884-85, (Dundee, 1884), p. 157, p. 295, p. 316, p. 329.
[71] MS 86/1/1/1, Samnuggur Co, MOTD, p. 447. 1 Apr 1885; MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 13, 1 Apr 1885.
[72] MS 86/1/1/2, Samnuggur Co, p. 240, minute of AGM, 27 Apr 1887.

firm. It is implied that the rebate referred to was a generous gesture on the part of Thomas Duff & Co to the Samnuggur directors. In effect, because the directorates were identical, this generosity amounted simply to a reclassification of an income stream to the same individuals. The example is suggestive because it points to the duplicative aspect of the managing agency structure. Nominally, Indian managing agencies were paid by the companies that appointed them to provide a service – management. However, in the case of Thomas Duff & Co, as with many other Calcutta managing agents, the duplication of personnel represented both amongst the directors or partners in the managing agency, as well as in the directorates of the managed firms, entailed a multiplication of income streams claimed by those individuals. Thus, from 1883, Duff, Barrie and the Nicolls were receiving a dividend and a director's fee from each of Thomas Duff & Co, the Samnuggur Co and the Titaghur Co when the work performed for each was more or less identical. This logic needs to be pursued further, though, to explain the function of a managing agency. The logic was more than a duplication of perquisites. The income streams from the managing agency commissions were in fact large income streams comparable in scale to that paid to the shareholders in the form of dividends – "a good dividend in themselves"[73] – and more stable than dividends because they were based on sales revenue. In most cases in Calcutta, the historical sequencing of firm entry into the jute industry ran from a pre-existing mercantile firm of managing agents promoting a new mill company. The reversal of this sequencing in the case of Thomas Duff & Co vis a vis the Samnuggur Co — throws into relief the essence of the managing agency form lying behind the appearance of equal exchange and a firm choosing to buy a service, management, from another firm through contracting instead of internalising it within the firm. [74] It is notable that the Samnuggur Co was effectively managed without any managing agency from 1881-1883. After the managing

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[73] Lamb Collection, Dundee City Library, "The Victoria Jute Company Limited; Prospectus. 1883." (Printed for Private Circulation), p. 2, 31 Jan 1883.

[74] Casson, 'Institutional Diversity in overseas enterprise; explaining the free-standing company'.

agency contract with Schoene, Kilburn was terminated, the role of marketing the Samnuggur's output devolved on the commercial manager in Calcutta, William Smith. **The essence of Thomas Duff & Co was that it embodied the monopoly of scarce information held by the collective of Duff, Barrie, the Nicolls, Smith and Robertson required to manufacture jute profitably in Calcutta.** Their privileged access to this information was concretised into a privileged income stream. Table 3.9 below demonstrates the scale of the privilege involved – comparing the total return on the directors' investment in the mill companies to the shares they held with the return as directors of the managing agency.

Table 3.9: Comparison of Samnuggur Co and Thomas Duff & Co, average annual dividends on paid up share capital to shareholders, (includes Samnuggur preference dividend from 1900).

Decade	**Samnuggur Co**	**Thomas Duff & Co**
1883-1890	7%	56%
1891-1900	9%	192%
1901-1910	9%	176%
1911-1920	20%	106%

Source: MS 86/1/1/1-18, Samnuggur Co, reports to AGMs; MS 86/5/1-4, Thomas Duff & Co, MOTD, reports to AGMs.

To appreciate the scale of the returns to Thomas Duff & Co – and the capital requirements of their actual rather than their fictitious "expenses" - it should be noted that by 1899, only £5,000 had been paid up on a nominal share capital of £50,000. This rose to a mere £12,500 in 1911. The share capital was only fully paid up in 1915, presumably because of the credit conditions pertaining during wartime forced the firm to start shipping goods on their own account.[75] Table 3.9 compares the average annual rate of dividend on a decadal basis of the Samnuggur Co with Thomas Duff & Co. The rate of return was an order of magnitude larger for

[75] According to records published in IJMA annual reports Thomas Duff & Co started appearing as significant shippers of jute fabrics during this period but had withdrawn again after the war. See H.C. Bose & Co, "Actual Clearances of Jute Fabrics to all Places in the Six Months to End of June 1917", published in IJMA, *Report of the Committee*, 1917, p. 283, and the same statement in subsequent reports.

Thomas Duff & Co than for Samnuggur Co throughout. Low profits in the 1880s meant that initially the Thomas Duff & Co directors exercised restraint in paying a dividend. Throughout the 1890s and 1900s, the rate of return was twenty times larger on a very small paid up share capital. High dividends paid out by the mill companies in the wartime decade of the 1910s, (combined with an increase in the paid up capital of the managing agency), reduced the differential during this period.

Table 3.10 below demonstrates how the actual dividends paid to named directors compared between one or other of the mill companies and the managing agency. From 1895 onwards, all the directors were earning considerably more income from their shareholdings in the managing agency, Thomas Duff & Co, than from their much larger investment in the equity of the Samnuggur and Titaghur Cos.

Table 3.10: Directors' incomes, £, managing agency compared with mill company, (includes dividends on ordinary & preference shares and directors' fees).

Companies: "TDC" = Thomas Duff & Co, "T" = Titaghur Co, "S" = Samnuggur Co.

Financial Year	**1888**		**1895**		**1901**		**1913**		**1919**	
Company	**T**	**TDC**	**T**	**TDC**	**S**	**TDC**	**S**	**TDC**	**T**	**TDC**
Paid-up capital,	114	4	157	4	300	10	200	34	600	50
Dividend	20%	100%	13%	200%	9%	124%	11%	166%	45%	45%
Thomas Duff	5,472	1,400	2,026	3,320						
James Nicoll	973	240	393	480	237	1,765	457	2,015		
CB Ovenstone			412	480	260	1,765	470	2,015	5,117	6,433
George Nairn*			204	720	333	1,765	543	2,015	2,985	6,433
Walter W Duff			393	560	426	1,765	423	2,015	3,241	6,433

* General manager in 1895, became director 1899.

Dividend % given as weighted average of ordinary & preference combined. All values current prices. Dividends for 1919 after deduction for income tax. Shareholdings based on shareholder lists for new issue shares during financial year preceding annual report.

Sources: Allocation of new issue capital, shareholder lists, MS 86/3/1/2, Titaghur Co, pp 21-23, 28 Nov 1888; MS 86/3/1/4, Titaghur Co, MOTD, pp 79-83, 11 Sep 1895; MS 86/1/1/7, Samnuggur Co, pp 242-9, 13 Mar 1901; Sam MS 86/1/1/14, MOTD, pp275-287, 14 Jan 1913; MS 86/3/2/9, Titaghur Co, Share Allotment Book, 1919-69, pp 1-23; MS 86/5/1/1-4, Thomas Duff & Co, passim. MS 86/5/1/1, Thomas Duff & Co, MOTD, p2, 30 Aug 1883, p147 17 Oct 1894, MS 86/5/1/2, Thomas Duff & Co, MOTD, p80 4 Sep 1900, MS 86/5/1/3, Thomas Duff & Co, MOTD, p184 29 Apr 1912.

The income stream from directors' fees followed a similar pattern over time. The value of directors' fees in real terms increased considerably in the case of the mill companies but exponentially in the case of the managing agency.

Table 3.11: Estimates of Directors' Fees, (£, constant prices, 1870 = 1).

Financial Year	Directors' fees, £				Fee to individual director, £			
	Samnu-ggur Co	Titaghur Co	Thomas Duff & Co	Total	Samnu-ggur Co	Titaghur Co	Thomas Duff & Co	Total
1883-1889	820	635	0	1,265	190	123	0	276
1890-1899	1,130	1,527	1,399	4,056	204	278	228	710
1900-1909	1,474	1,658	3,848	6,979	246	276	641	1,163
1910-1916	1,648	2,546	5,476	9,670	275	424	913	1,612

Sources: MS 86/1/1/1-18, Samnuggur Co; MS 86/3/1/1-18, Titaghur Co; MS 86/5/1-4, Thomas Duff & Co, MOTD, reports to AGMs; MS 86/1/5/5/1-18, Samnuggur Co; MS 86/3/5/5/1-23, Titaghur Co; Reports of the directors, balance sheet, working account and profit and loss account.

The directors may have viewed the increased fees as an appropriate reward for the greater responsibilities falling of managing a rapidly expanding capital.[76] However, the directors' meetings of the mill companies and managing agency typically took place consecutively at the company offices on the same day, entailing no additional expense in terms of time or travelling and little additional time commitment – the annual meeting of the Samnuggur Co just prior to that of the Titaghur Co of 1902 lasted just 15 minutes.[77] Moreover, the creation of a full time secretariat in Dundee from 1883 and the devolution of responsibility to the general manager in Calcutta, together with the growth in the size of the directorate from the four founders to six by the 1890s, meant that each individual director was probably performing less work over time

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[76] The increase in costs paid by the mill companies for the upkeep of the Dundee office was justified in these terms. The Company Acts of the turn of the century appear to have entailed a closer relationship between directors' fees and profits. The directors referred to the "desirability of bringing the [firms' Articles of Association] into conformity with the provisions of the Companies' Act of 1900 and also in view of recent decisions in the law courts. [...] A fair and proper basis [on which to pay directors fees] would be a commission of 2 ½ % to each director on the amounts of the dividends, interim and final, paid during each year." MS 86/5/1/2, Thomas Duff & Co, MOTD, 7 Feb 1906, p. 351.

[77] MS 86/1/1/8, Samnuggur Co, Minute of AGM, 5 Mar 1902, 12.00 pm, p. 141; MS 86/3/1/7, Titaghur Co, Minute of AGM, 5 Mar 1902, 12.15 pm, p. 136.

while earning a growing combined income across the two mill companies and the managing agency in the form of directors' fees. Any idea that the directors' fees represented a payment for services rendered was purely notional. In reality, these were rents established by custom over time, which the directors were able to ratchet up as a windfall that was tolerated by the shareholders without a family connection to the directors in exchange for maintaining the dividend-paying capacity of the mill companies at a satisfactory level. Given the variation in the size of shareholdings held by different directors demonstrated in Table 3.10 above, it is not possible to draw an inference about the size of directors' incomes from dividends relative to income from directors' fees from the data presented. Table 3.12 below estimates the dividend income earned by an "average director" holding a 5% stake in the mill companies' equity tapering to 2.5% around 1900 in line with the observed trends in the shareholding registers. The dividend income of an "average director" remained fairly stable as a multiple approximately four times larger than the income earned from directors' fees as the invested capital of the mills expanded.

Table 3.12: Average annual director's fees compared with dividend earned by an "average director", (£, constant prices, 1870 = 1) – all aggregated across 3 companies.

Decade	Fee to individual director	Dividends to an "average director"	Fees/ dividends multiple
1880-1889	276	1,438	5
1890-1899	710	3,028	4
1900-1909	1,163	4,686	4
1910-1916	1,612	6,931	4

Sources: Ibid, Table 3.11.

It should be noted that an ordinary shareholder of Samnuggur or Titaghur lacking insider knowledge would have had little information regarding the managing agency's remuneration. The motion to the special general meeting ratifying the agency agreement for 20 years with Thomas Duff & Co made no reference to the level of commission payments and was only attended by 5 non-employee shareholders, all with close ties to the directors.[78] Until 1900, when a printed annual report with a balance sheet started to be circulated to the shareholders in advance of the shareholders' AGM, there was no source of information which a shareholder might have consulted to discover the value of the annual sales revenue – from which the managing agency's commission could be calculated.[79]

The condition for the directors of the managing agency, Thomas Duff & Co, to capture and retain the lucrative rental income described was their ability to maintain the dividend paying capacity of the managed mill companies at a level above other opportunities to invest in the Dundee capital market. High profitability and dividends enabled the directors to retain control through a more indirect causal chain. It ensured that there was sufficient demand for the mill companies' shares to permit the directors to exercise selectivity and close supervision of who obtained a shareholding, under the provisions of the firms' Articles of Association. In the next section, the nature of the threat posed by a rival Dundee firm constructing a jute mill in Calcutta is considered.[80]

The Formation of the Victoria Jute Co.

In 1883, the Victoria Jute Co was launched to construct a jute mill in Calcutta by a group of Dundee entrepreneurs whose composition was almost entirely separate from that of the Thomas Duff & Co group. Their prospectus suggests that they wished to emulate Samnuggur's example:

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[78] MS 86/1/1/1, Samnuggur Co, Minute of Emergency Special General Meeting, pp. 261-6, 27 Jun 1883.

[79] From 1900, see MS 86/1/5/5/1-18, Samnuggur Co; MS 86/3/5/5/1-23, Titaghur Co; Reports of the directors, balance sheet, working account and profit and loss account.

[80] See Chapter 5's account of Finlay, Muir & Co's Champdany mill for the opposite case – where low profitability led to the involution of the firm's shareholder base and the stagnation of the firm's productive capacity.

> It is also well known that much larger profits than the [rupee mill companies listed] above have been made by some of the other Companies, which do not publish their balance sheets, and which are managed on the same lines as the proposed Company will be carried on.[81]

The firm was launched with a £2 call on an initial share capital of £50,850, denominated in £10 shares.[82] The shareholders encompassed a much wider cross-section of the great and the good amongst Dundee’s textile manufacturers and merchants than was the case for Samnuggur. Table 3.13 shows the initial subscribers.

[81] Lamb Collection, Dundee City Library, “The Victoria Jute Company Limited; Prospectus. 1883.” (Printed for Private Circulation), p. 2, 31 Jan 1883.
[82] Lamb, ibid.

Table 3.13: Shareholders of Victoria Jute Co, 1883.

Directors/employees	£10 Shares	%	Occupation, Address [Dundee unless stated]
Angus Macintyre	500	10%	"Merchant, Home Bank, West Ferry"
John Smith	500	10%	"Manufacturer, Airlie Mount Alyth"
James Luke	200	4%	"Spinner, Dundee"
John Adamson	260	5%	Proprietor, Careston, Brechin
Alexander Gilroy	200	4%	"Merchant, Dundee"
William Bruce Thompson	200	4%	"Engineer & Shipbuilder, Dundee"
John Watson Shepherd	110	2%	Merchant, 6 Panmure St
James Luke Jr	100	2%	"General Manager, Victoria Jute Co Ltd"
Michael Ferrier	20	0.4	Mill manager, 27 Isles Lane
Ordinary shareholders			
Alexander Anderson	400	8%	Merchant, 11 King St
Thomas Lawson	400	8%	"Hope Foundry, Leeds"
Joseph Lindsay	350	7%	"Engineer, 4 Somerville Place"
James Duncan	200	4%	Merchant, 33 Cowgate
William Edgar Allen	200	4%	Manufacturer, Hill Meadow Steel Works, Sheffield
Thomas Bell & Sons	125	2%	Manufacturers, Belmont Works
William Hunter	100	2%	Draper, 19 Wellgate
William Hynd Norrie	100	2%	Merchant
William Don Gillis	80	2%	Iron merchant, 96 Miller St, Glasgow
Henry Gourlay	60	1%	Engineer & shipbuilder, Dundee foundry
George Stevenson	60	1%	Dyer, 1 Woodville Place
Alexander Cook	50	1%	"Manager of Wellington Jute Co., Calcutta"
John Samuel Bradford	50	1%	Merchant, The Sycamores, Albany Terrace
William Briggs	50	1%	Manufacturing chemist, 3 Springfield Terrace,
Bridget Jones Burke,	50	1%	61 Reform St
Peter Miln Duncan	50	1%	Steam ship owner
Alexander Gourlay	50	1%	Dundee
Thomas Keenan	50	1%	Retired merchant, Gowan Bank Cottage, West
John Leng	50	1%	"Newspaper Proprietor, 7 Bank St"
William Moir	50	1%	"Bank of Scotland"
George Worrall	50	1%	Hacklemaker, Dundee
David Mcfarlane	40	0.8	Manufacturer, Coupar, Angus
George Shleselman	30	0.6	Merchant and manufacturer.
John Nicoll	25	0.5	Merchant, 27 St Andrews St
Alexander Thomson	25	0.5	Shipowner, Bon Accord Villa
Alexander Black	20	0.4	Manufacturer, Alyth
Rev William Elder	20	0.4	Parish minister, Manse, Tealing
William Mcfarlan	20	0.4	Grazier, Cupar, Fife
Rev John Calder	20	0.4	Parish minister, New Manse, Old Aberdeen
Thomas Fleming	20	0.4	Todhillbank, Newton Mearns, by Glasgow
James Sievwright Reid	10	0.2	Warehouseman, 7 Hill St
William Westland Sharp	10	0.2	Coal merchant, 23b Victoria St, Forfar
Thomas Keay	10	0.2	Banker, Fernbank, Bishopbriggs, Glasgow

Source: MS 86/2/2/7, Victoria Co, Lists of shareholders, 1883-1906; information about occupation and address supplemented by reference to *Dundee Directory*, *Dundee Courier* and Censuses, household enumerators.

The original directors included the merchant-manufacturer James Luke, of Kinmond, Luke & Co, one of the largest traders in raw jute and the owner of the Pleasance Works in Dundee, and the Erichtside Linen Works in Blairgowrie.[83] Luke's knowledge of Calcutta had seen him appointed a director of two other Calcutta mills with headquarters in Glasgow, the Champdany Co from 1873 and the India Jute Co from 1881.[84] Another director was the merchant Angus Macintyre, of Macveigh, Macintyre & Co, who owned the Baluniefield Bleachfield.[85] The third director was John Smith, senior partner of David Smith & Sons, Alyth, the owner of the Alyth linen and jute works "employing 135 Men, 30 Boys [and] 290 Girls" in 1881.[86] James Luke's son, James Luke Jr was employed as the firm's general manager in Calcutta[87] and Michael Ferrier, previously manager at James Paterson's Coldside Works in Dundee, as mill manager.[88] John Watson Shepherd, merchant and insurance agent for the Liverpool & London Fire & Life, was appointed Secretary.[89] John Adamson, William Bruce Thompson and Alex Gilroy joined the directorate subsequently in 1884, 1888 and 1893.[90]

The ordinary shareholders included Dundee textile manufacturers such as Thomas Bell & Sons, as well as prominent merchants in the New York trade such as James Duncan of Jordanstone, who shared Smith's Alyth roots. There was also a network of textile machinery, engineering, shipbuilding and steel manufacturers, including Joseph Lindsay, senior partner of Urquhart, Lindsay, Dundee, and Thomas Lawson, partner of Samuel Lawson & Sons, Leeds, which specialised in the manufacture of machinery for jute spinning and weaving. As a collective, the

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[83] Obituary, Scotsman, 16 Dec 1903, p. 9.

[84] Glasgow University Archive, MS 7/1/2/1/1, Champdany Co, General Meeting minute book, 19 Sep 1873; SOAS Archive, Mackinnon Papers, pp. MS 1/BISN/1/19/1, India Jute Co Ltd, Annual Report, 20 Apr 1882.

[85] "Deplorable Shooting Accident. Dundee Merchant Killed." *Dundee Courier*, 16 Sep 1884; Angus Macintyre, Inventory SC 45/31/34 registered at Dundee Sheriff Court, 15 Nov 1884, pp. 488-500.

[86] 1881 Scotland Census, John Smith household enumerator, Alyth Parish, p 17, Roll cssct1881_99; Obituary, Scotsman, 13 May 1916, p. 6.

[87] MS 86/2/2/7, Victoria Co, Lists of shareholders, 1883-1906. James Luke obituary, "Death of 'Max'", *Times of India*, 30 Jun 1913, p. 6.

[88] MS 86/2/2/7, Victoria Co, Lists of shareholders, 1883-1906. Dundee Directory 1871-72 (Dundee, 1871), "Mill and Factory Managers", p. 354.

[89] Dundee Directory 1882-83, (Dundee, 1882), p. 31, p. 290.

[90] MS 86/2/5/5, Victoria Co, Annual Report, 31 Mar 1884; MS 86/2/1/1, Victoria Co, Minute of AGM, 21 Feb 1893, p. 18.

shareholders of the new firm represented a more broadly based set of complimentary competences than Samnuggur's and a potential source of competitive advantage. However, the firm's early years showed that it was crucially lacking in location-specific knowledge of the Calcutta market that was a necessary condition for the firm to succeed. They also lacked a comparable figure to Thomas Duff as Chairman of Samnuggur, who was unencumbered by other business commitments in Dundee. Further, the choice of a Calcutta agent with family links to a director rather than on the basis of merit did not serve the firm's interests.

The Victoria Jute Co as a "Free Standing Company", 1883-88.

The Victoria Co's prospectus refers to some of their Calcutta competitors being "severely handicapped with very costly and not very well appointed works, besides having to pay heavy commissions on their gross sales (a good dividend in themselves) to their managing firms in Calcutta." It goes on to state;

> The business of the company will be managed by a board of Dundee gentlemen of long practical experience in the trade, and it is not too much to expect that by careful and efficient oversight of the company's affairs, both here and in Calcutta, a satisfactory result should be given to the shareholders.[91]

The implication was that the firm would be more profitable than competitor mills in Calcutta by drawing on manufacturing expertise and management skills from Dundee while eliminating costly agency commissions. (In this sense, the Victoria Jute Co, for a short period, conformed to Wilkins' notion of a "free standing company": to paraphrase, a firm formed in the UK to make a direct foreign investment in a specific business project without clear links to a pre-existing business group.[92]) The coincidence of Victoria's formation on a free standing basis just

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[91] Lamb Collection, Dundee City Library, "The Victoria Jute Company Limited; Prospectus. 1883." (Printed for Private Circulation), p. 2, 31 Jan 1883.

[92] Mira Wilkins, "The Free-Standing Company, 1870-1914: An Important Type of Foreign Direct Investment", *The Economic History Review*, Vol. 41, No. 2, (May, 1988), pp. 259-282.

as Thomas Duff & Co was being formed in Dundee as a managing agency to run the Samnuggur and Titaghur Cos, is striking. This must surely have been a significant factor influencing the hostile attitude of Thomas Duff & Co the construction of the Victoria mill just across the river Hooghly from the Samnuggur mill. The existence of another mill company managed by a different group of Dundee entrepreneurs was a threat to the Thomas Duff & Co group because it had the potential to lead investors in the Dundee capital market to draw comparisons of their performance and to scrutinise the differences in their institutional setup. In the long run, the Victoria Co might have become a competitor for funds in the Dundee capital market.

The existing historiography on the dispute between Samnuggur and Victoria has focused on the threat the Victoria Co posed to Samnuggur's labour supply, while neglecting the Dundee dimension conditioning the firms' mutual antipathy. Wallace writes that "it was considered by the mills a matter of life and death to prevent a rival company settling down in proximity to their labour supply."[93] In order to forestall this eventuality, the Samnuggur Co had purchased several small plots of land within the bounds of the Victoria site, using Indian proxies, and had then taken the Victoria Co to court to obtain an injunction against them proceeding with construction of the new mill:[94]

> But the manager sent out by the Dundee board of the Victoria Company, Mr James Luke Junior (the gentle [columnist] 'Max' of [the Calcutta newspaper] 'Capital'), with Galstaunian* pluck and obstinacy defied the repeated orders of the lower courts and went on building gaily, till the walls were up to beam level, when an injunction was issued by the District judge of Hooghly. Further progress was suspended for about a year, when the case was transferred to a Calcutta High Court Bench, who awarded nominal damages as compensation to the Samnuggur Company.[95]

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[93] Wallace, Romance (London, 1928, 2nd edition), p. 46.

[94] MS 86/1/1/1, Samnuggur Co, MOTD, p. 300, 3 Jan 1884.

[95] Wallace, *Romance of Jute, p.* 46. *Presumably a reference to Johannes Galstaun, an Armenian property magnate who built extensively in Central and South Calcutta at the beginning of the 20th Century, the preferred residential areas of wealthy Europeans. See Susmita Bhattacharya, "The

Wallace's generous assessment of James Luke Jr's role as Victoria's agent may have been informed by a sensitivity to the respect that Luke enjoyed in European society in Calcutta at the time that the first edition of *The Romance of Jute* was written.[96] Luke had well known as an editor and regular columnist commenting on business matters for the newspaper *Capital*.[97] However, whether it was a wise decision for the Victoria Co to appoint the son of one of their directors as their Calcutta agent is open to question. Luke Jr's attempts to trade as a jute merchant on his own account had led to his sequestration in Dundee in 1875, and to the bankruptcy of his firm, Luke & Co, in London in 1882, the year before the Victoria venture.[98] Certainly, Luke would not have been privy to the location-specific knowledge of the niceties of the Calcutta legal system and of the wider business environment that might have facilitated the prosecution of the dispute with the Samnuggur Co. A contemporary report in the *Dundee Advertiser* brought out – in typically Orientalist[99] discourse - the complexity of the legal dispute, involving questions of priority within the convoluted hierarchy of the Bengali system of tenurial relations, involving multiple gradations of sub-tenure[100]:

> There seems, in fact, to have been some slumbering feud between the Dundee jute clans or their friends which led to the digging up of the hatchet, the donning of the war paint, and the subsequent lively passages in the Law Courts involving questions of Mouzahs, Mehals, Putnidar and Zenundar, Churs, Hookamaamahs and Dakhillas, and other appurtenances of legal warfare, and generally an

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Armenians in Calcutta", Chapter in Banerji, Gupta and Mukherjee (eds), *Calcutta Mosaic: Essays and Interviews on the Minority Communities of Calcutta* (Delhi, 2009), p. 78.

[96] D. R. Wallace, *The Romance of Jute* (Calcutta, 1909, 1st Edition)

[97] Obituary, "Death of 'Max'", *Times of India*, 30 Jun 1913, p. 6.

[98] *Edinburgh Gazette*, p. 776, 16 Nov 1875, James Alexander Luke sequestration; *London Gazette*, p. 6351, 12 Dec 1882, "Bankruptcy of James Alexander Luke of Luke & Co, Colonial Broker, 7 Mincing Lane."

[99] Edward Said, *Orientalism* (New York, 1979).

[100] See Ranajit Guha's authoritative study, *A Rule of Property for Bengal: An Essay on the Idea of Permanent Settlement* (Durham, North Carolina, 1996, revised edition)

> unedifying exhibition of Bengali unscrupulousness [sic] as opposed to Dundee energy [sic] and enterprise.[101]

In the event, the press coverage in the pages of the *Advertiser* was overwhelmingly favourable to the Victoria Co. Undoubtedly, the liberal sensibilities of Dundee opinion would have been offended by the blatant restraint of trade involved in the Samnuggur Co's legal manoeuvres. The *Advertiser* piece goes on to quote approvingly the judge's comments, in ruling against Samnuggur, about the conduct of their general manager, William Smith:

> The proved conduct of Mr Smith on the part of the Samnugger Company seems to point to consciousness on his part that the transactions were not justifiable by law. [...] I lay no stress on the 'Benami' (in another's name) character of the ultimate transactions. These were perhaps precautions prudently dictated by considerations of expense. But the extraordinary fact admitted by the business manager of the company that **not a penny of all the numerous and large payments made on account of land and in connection with these transactions had been entered in the plaintiff company's accounts is remarkably significant**. [my emphasis][102]

The article concludes with the prescient comment that, in conditions of trade depression, "it may be doubtful as to whether it would be more fitting to congratulate the Victoria Company as successful litigants or to condole with them as prospective jute manufacturers."[103] The *Advertiser*'s later analysis of the exceptional items recorded on the Samnuggur's balance sheet suggested that the overall costs of the dispute may have been as much as £6,000.[104] In the final analysis, this appears to have been money well spent. The Samnuggur Co drew out the dispute by exhausting the process of Appeals open to them in higher courts up to August 1886, when they indicated a "willingness to consider any reasonable settlement to end the whole

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[101] Letter from Calcutta correspondent quoted in "Commercial Markets", *Dundee Advertiser*, 10 Jun 1885, p. 4.

[102] Quoted in letter from Calcutta correspondent quoted in "Commercial Markets", *Dundee Advertiser*, 10 Jun 1885, p. 4.

[103] Ibid.

[104] "Commercial Markets; from our Calcutta Correspondent", 19 May 1885, *Dundee Advertiser*, 11 Jun 1885, p. 4.

matter, provided any rights of way or other facilities which are useful or of value to the company are safeguarded and reserved”.[105] On the same date they approved a transfer of 10 ordinary shares by the Victoria Co’s Dundee lawyer John P Kyd to James Luke Sr, a director of the latter firm, presumably as a signal of good will.[106] At the height of the legal dispute the previous year, the minutes had recorded possibly the only instance of the directorate preventing a share transfer up to 1921:

A transfer of 20 second issue shares by James B Crichton to John P Kyd, solicitor, Dundee, was submitted to the board, and the directors, in the exercise of the powers conferred on them by section 16 of the company’s articles of association, declined to approve of same.[107]

By the end of 1886 financial year, nearly five years after the firm had been launched, the Victoria Co had only succeeded in putting in 80 sacking looms, securing a paltry £1,000 net profit on the £50,000 share capital called up.[108] While the media coverage may have favoured Victoria, the verdict of the shareholders on the management in Dundee and Calcutta was made clear at the AGM of 1888:

> On account of the heavy overdraft with the bankers, the directors resolved in March last to issue 2,415 [£10] shares on the capital of the company upon which £2 per share should be called up, and to offer them to the present shareholders in proportion to the existing shares held by them – circulars to this effect were issued to the members of the company but only a portion of the shares so offered were accepted. Those not applied for can now be allotted by the directors as they deem proper.[109]

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[105] MS 86/1/1/2, Samnuggur Co, MOTD, p. 150, 4 Aug 1886.

[106] Ibid.

[107] MS 86/1/1/1, Samnuggur Co, MOTD, p. 435. 18 Feb 1885.

[108] It would take the Victoria Co 21 years to pay back the initial projected capital of £150,000 for a 320 loom mill, compared to the seven years it took Samnuggur to repay a similar amount. MS 86/1/1/1, Samnuggur Co, Reports to AGMs; MS 86/2/5/5, Victoria Co, Annual Reports.

[109] MS 86/2/5/5, Directors reports and accounts of the Victoria Jute Co. Ltd., 1884-1958, 12 Jun 1888.

585 new shares were then allocated to the directors and shareholders of the Thomas Duff & Co group as the hostilities between the firms were drawn to a conclusion, and negotiations entered into to transfer the managing agency to Thomas Duff & Co.[110]

> With regard to the agency of the company abroad the directors have become greatly dissatisfied with the management of Mr James Luke Junior and after long and anxious deliberation came to the conclusion that the interests of the company demanded change. Accordingly on 31st July last they resolved to dispense with Mr Luke's services and since then he has ceased to be in the company's employ. [...] An engagement has been entered into with Messrs Thomas Duff & Company Limited, a firm of large experience and already having charge of two mills in India, whereby they undertake the management of the company's business for a period of 3 years from 1st January last. The directors believe this appointment to be in the best interests of the company and that the shareholders will approve of their action.[111]

The report also detailed how "[a]ccounts received do not bear out the strong assurances given by the late manager in Calcutta" that a £4,000 debt owed by the gunny broker Chatterjee for goods sent him on consignment would be recovered. James Luke Sr resigned from the board in the wake of his son's dismissal and was replaced by Alexander Nicoll, representing Thomas Duff & Co, who had acquired 800 shares, or a 9% stake, in the firm.[112] The debt owed by Chatterjee is significant because the goods he received were on consignment. This indicates the failure of Luke Jr or the Dundee board to find an outlet for their production using European intermediaries of good repute and creditworthiness, with whom established mills such as Samnuggur preferred to transact. Scrutiny of the Victoria Co's ledger for 1886-88 confirms

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[110] MS 86/2/2/7, Victoria Co, Lists of shareholders, 1883-1906, 31 Dec 1889; MS 86/5/1/1, Thomas Duff & Co, p45 24 Oct 1888 refers to the negotiations commencing, which was immediately after the resignation of James Luke Sr from the Victoria directorate.

[111] MS 86/2/5/5, Directors reports and accounts of the Victoria Jute Co. Ltd., 1884-1958, "Annual Report, Balance Sheet, and Revenue Account for nine months ending 31st December 1888".

[112] MS 86/2/2/7, Victoria Co, Lists of shareholders, 1883-1906, 31 Dec 1889; MS 86/5/1/1.

their heavy reliance on transactions with NP Chatterjee and other Indian intermediaries.[113] Under Luke's management, they had been unable to exploit the shared Alyth connection of director John Smith with shareholder James Duncan's hessian marketing operation in New York.

The terms of the managing agency agreement were remarkable for their succinctness:

> Thomas Duff and Company Limited shall have general and implied authority in their discretion to transact all business for the said jute company which they may consider proper: But where opportunity occurs and time permits they shall in all matters relating to the business of the said Victoria Jute Company Limited act upon and carry out the instructions of the directors of the said Victoria Jute Company Limited.[114]

The agreed terms went on to state that the Victoria Co would pay the salaries of a "commercial assistant and a staff of native clerks" under the direction of Thomas Duff & Co in the latter's Calcutta office. "Calcutta orders" and "export orders" for manufactured goods were to be divided between the Victoria, Samnuggur and Titaghur Cos in "such a proportion [...] as is fair to them and the other Companies", presumably in proportion to their productive capacity, the orders "to be invoiced to the said Thomas Duff and Company Limited as the only known and disclosed buyers." This suggests that in exchange for finding a market for Victoria's goods, Thomas Duff & Co were under no obligation to disclose information about their marketing network. Thomas Duff & Co were not to be held "personally responsible" for any decisions made "in the ordinary course of business" but would be liable for any action contravening an explicit order of the Victoria's directors. The autonomy of the Victoria Co's management was carefully delineated:

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[113] MS 86/2/2/7, Victoria Co, Ledgers of transactions with NP Chatterjee, KN Biswas, and NV[?] Bose, 1886-88.

[114] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 54, 19 Dec 1888; "Copy, Minute of Agreement referred to in Minutes of Dec. 19th 1888.", p. 447.

> In no case shall the said Thomas Duff and Company Limited have any concern with or control over the Dundee management or office of the said Victoria Jute Company Limited which shall **always** [my emphasis] be and remain as at present under the direct control of the directors of the company.[115]

Any disputes between principal and agent were to be submitted to the arbitration of David Myles, the auditor of the Victoria Co's accounts.[116]

Thomas Duff & Co were to be paid a 1.5% commission on sales revenue for a period of 3 years to September, 1891. It appeared to be the implicit discipline of the short time-period of the contract and ties of mutual trust based on cross-shareholdings that would guarantee the agent's good conduct rather than any great precision in the contractual terms. The following year, Thomas Duff & Co accepted a proposal to change the terms. In return for a 3% commission, the agents agreed to assume "the entire cost of the Victoria Co's Calcutta staff", to pay a rebate of £300 "slump abatement" and to "give [the Victoria Co] its assistance when required in their financial operations [in Calcutta]."[117]

The subsequent history of Victoria's subsumption under the management of Thomas Duff & Co neutralised the threat of an independent competitor for investment funds in the Dundee capital market for the purpose of jute manufacturing in Calcutta, although it's consolidation into the Thomas Duff group was an incremental process over the next 30 years, during which its relative autonomy was eroded.

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[115] MS 86/2/2/1, Victoria Co, "Minute of Agreement referred to in minutes of December 19th, 1888", pp. 447-50.

[116] Ibid.

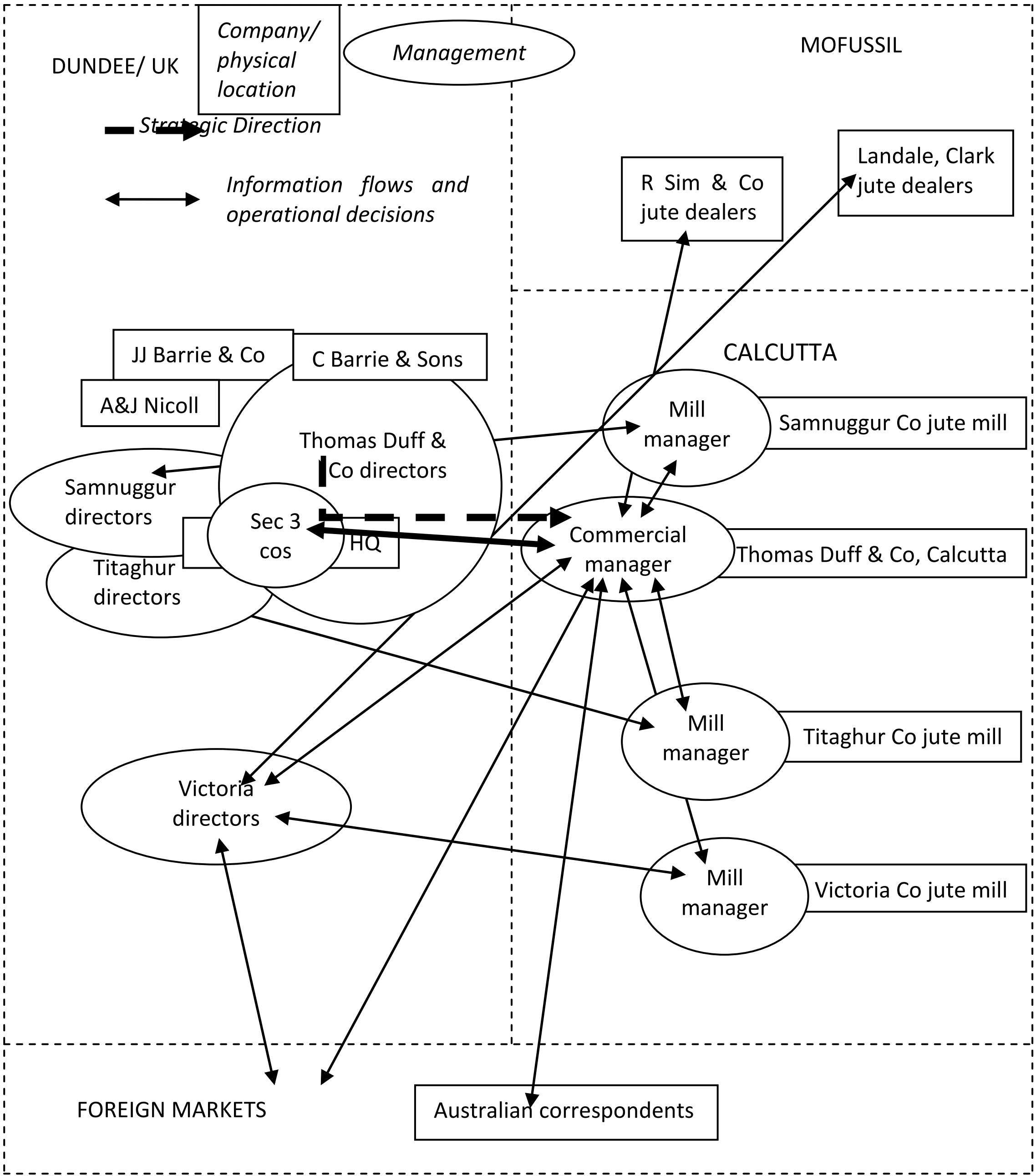
[117] MS 86/5/1/1, Thomas Duff & Co, p. 67, 9 Oct 1889.

3.3 The Evolution of the Thomas Duff & Co Group Structure, 1888-1918.

Having gained the Victoria agency, the Thomas Duff & Co group structure had assumed its mature form. Breaking off from the narrative of the firm's development, Diagram 3.1 below represents the boundaries of the Thomas Duff & Co group of firms and their spatial organisation between Dundee, Calcutta and the jute growing districts in the *mofussil*. The locus of strategic direction in the collective entrepreneurial judgement of the Thomas Duff & Co directors is depicted and contrasted with flows of information and operational decision-making. The structure served as the basis for monitoring and the enforcement of a managerial hierarchy, although they also correspond to some extent to monetary flows. Information flows and operational decision-making were densely concentrated on the Calcutta office of Thomas Duff & Co and in the person of the general commercial manager there, making this the crucial principal-agent relationship within the managerial hierarchy permitting the functioning of a multinational managing agency operating with the asset-specific knowledge required of a manufacturing enterprise.

The organisation chart captures the increasing spatial and hierarchical complexity of the group structure relative to its original incarnation as the 'free-standing' company, the Samnuggur Co. Subsidiary flows of information passed between the mill managers of the three mill companies communicating with their respective directorates through the company secretaries in Dundee, which served as a check on the activities of the Calcutta general manager by which the Dundee directors could hold him accountable. The Victoria directors in Dundee communicated directly with the general manager of Thomas Duff & Co "in the ordinary course of business". The capacity of the growing firm to extend its operations vertically along the value chain is illustrated by the informal vertical integration with Robert Sim & Co, the raw jute dealers at Naraingunge in the *mofussil*. A similar process is depicted in the other direction for the marketing of jute manufactures through the networked relationships with the shipper, Charles Barrie & Sons, and the firm's Australian correspondents. While Thomas Duff & Co were responsible for jute purchases to supply all three mills, the relative autonomy of the Victoria

Diagram 3.1: Thomas Duff & Co Group, 1888-1918 - Organisation Chart



Sources: MS 86/1/1, Samnuggur Co, MOTD; MS 86/2/1, Victoria Co, MOTD; MS 86/3/1 Titaghur Co; MS 86/5/1 Thomas Duff & Co, MOTD.

Co is indicated by the fact that its directors cultivated networked relationships with the raw jute dealers Landale, Clark & Co and with the Calcutta gunny brokers Perman & Hynd. Their senior partners, respectively John B Clark[118] and David Hynd[119] joined the Victoria directorate on their retirement from India.

The spatial and temporal dimensions of the information flows depicted in the organisation chart require more careful specification in order to grasp the nature and complexity of managing a multinational manufacturing concern. Wilkins studies of the institutional forms taken by foreign investment during the period of the "first globalisation"[120] found that foreign direct investment in manufacturing concerns were extremely rare by comparison with investment in mercantile enterprises and industry engaged in the extraction of raw materials.[121] Her finding points to the distinctive technical quality of the information flows required to monitor a manufacturing process at a distance rather than in situ, which put a premium on the careful selection of agents at the point of production. While mercantile enterprise conducted across territorial borders had existed for millennia, multinational manufacturing was a historically novel phenomenon premised on the cluster of technical innovations associated with the age of imperialism which compressed space and time – the Suez canal, the steamship and the telegraph. A further historically specific enabling condition for the functioning of firms like the Thomas Duff & Co group was the existence of external economies associated with the institutional apparatus of British imperialism, which permitted the clustering of a critical mass of commercial and technical personnel of Dundee origin with knowledge of the jute industry in Calcutta operating under the permissive legal and financial

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[118] MS 86/2/5/5, Victoria Co, Annual Report 1905, p. 2.

[119] MS 86/2/5/5, Victoria Co, Annual Report 1910, p. 2.

[120] Deepak Nayyar, "Globalisation, History and Development: A Tale of Two Centuries", *Cambridge Journal of Economics*, Vol 30, No 1, 2006, pp. 137-159.

[121] Mira Wilkins, "The Free-Standing Company, 1870-1914: An Important Type of Foreign Direct Investment", *The Economic History Review*, Vol. 41, No. 2, (May, 1988), pp. 259-282.

framework of the Government of India but considerations of space do not permit this aspect to be considered here in detail.

The nature of the spatial and temporal compression enabled by these new technologies is indicated by the spatial integration of Dundee with Calcutta and the Mofussil into the business network depicted in the organisation chart. The introduction of river steamers and the extension of the railway network to the Goalundo terminus[122] in East Bengal, in proximity to the main jute marts, had also compressed the spatial and temporal aspects of communication and interchange between Calcutta and the mofussil into days rather than weeks. Basic communication between all locations in the chart began to operate on the same temporal plain of more or less instantaneous communication with the introduction of the telegraph. For managerial purposes, the innovation of steamships and the opening of the Suez canal to commercial traffic in 1869[123], were not only significant for bringing final markets closer and eroding the cost of freight and eroding the competitive advantage in pricing Dundee enjoyed in markets such as New York. Just as significant, was the reduction in time for mail services and the exchange of personnel to operate between Calcutta and Dundee – from about 6 weeks in 1857 when the Barnagore was formed, to 3 weeks by 1890.[124]

In the case of Thomas Duff & Co, these technologies were embraced to introduce a system of monitoring between the principals in Dundee and their agents in Calcutta. The general manager of the Calcutta offices of Thomas Duff & Co sent a detailed weekly letter to the company secretary in Dundee for the directors of the mill companies to approve at their

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[122] LSS O'Malley, *Bengal District Gazeteers: 24 Parganas*, (Calcutta, 1914), p. 160; Halford Lancaster Hoskins, British Routes to India (London, 1928); RV Kubicek, "The Role of Shallow-Draft Steamboats in the Expansion of the British Empire, 1820-1914", *International Journal of Maritime History*, 6 (1994), pp. 85-106.

[123] Daniel R Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940* (Oxford, 1988), p. 4.

[124] John K. Sidebottom, *The Overland Mail: A Postal Historical Study of the Mail Route to India,* (London, 1948). For example, the Samnuggur mill manager Keddie's special report dated 23rd September, 1890, MS 86/I/2 (67), was discussed at the board meeting of 15th October, 1890, MS 86/1/1/3, Samnuggur Co, p. 224.

weekly board meetings. In their role as directors of Thomas Duff & Co, the same directors met less regularly and less frequently, as the nature of their decision-making role was more strategic. The general manager's weekly report was supplemented by a weekly report from each of the mill managers to their respective directorates.[125] A process of refinement over time took place, formalising the types of information the directors expected to receive from Calcutta in the form of pro forma letters on headed paper. Refinements included specifying magnitudes in the working accounts in more disaggregated form, such as the different categories of warp, weft and hessian jute purchased for stock, their quantity and price, or differentiating hessian and sacking goods and the price, quantity and timescale on which they had been sold forward.[126] More sensitive information might be communicated by the general manager under the rubric "semi-official" or "private".[127] Mill managers also exchanged detailed technical correspondence facilitated by photography of machine parts with both directors and machinery suppliers, for instance when trying to fix engine breakdowns.[128]

The information contained in the managers' reports was supplemented by the systematic reporting of a series of summary accounting entities from the working accounts on a monthly basis which allowed the Dundee directors to monitor performance:

> It was decided to request the Calcutta agents to be more prompt in forwarding their monthly statements and accounts and also to ask them for a note of their probable outlay on plant as from 1st

[125] See for instance, MS 86/1/1/1, Samnuggur Co, MOTD, p. 286, 22 Nov 1883; p. 288, 29 Nov 1883. The system of numbering the letters annually as referred to in the directors' minutes indicates that they were weekly, although few of the letters themselves have survived.

[126] MS 86/1/1/1, Samnuggur Co, MOTD, p. 53, 18 Dec 1876.

[127] Examples of "Private" letters from the general manager include MS 86/V/7/1a, Letters from William Smith, Calcutta, to Dundee, 23 Apr 1887, and are referred to by the directors at MS 86/1/1/1, Samnuggur Co, p. 292, 13 Dec 1883, and MS 86/1/1/7, Samnuggur Co, p. 35, 15 May 1900; MS 86/V/7/1a, Letters from William Smith, Calcutta, to Dundee, 8 May 1888 is labelled "semi-official."

[128] MS 86/I/2 (67) Special Manager's Report, [19 pages], 23 September 1890, Samnuggur.[mill manager] R. Keddie to the Samnuggur Jute Factory Co. Dundee; report of engine breakdown of 19 September 1890, details of damage to engine and proposed repairs. Encloses photographs, MS 86/I/11(68), of broken and bent parts, (photographer: George Spence [engineer] and diagrams of engine performance.)

> November and to furnish a monthly statement showing the stock of goods on hand and orders unexecuted."[129]

The monthly results were harmonised in rupee terms on a half-yearly basis by the Calcutta auditors Lovelock, Lewes & Co[130], then sent to the Dundee auditor Robert B Ritchie[131] for final presentation in the annual report on a sterling basis after accounting for fluctuations in exchange. The evolution of the mode of presenting the monthly accounting entities in the minutes of the directors demonstrates the increasing sophistication of financial monitoring within the firm. As indicated above, the information became more disaggregated and complex in distinguishing types of input and output – permitting more detailed inferences to be drawn about the relative efficiency of different manufacturing processes - and also the timescale of sales to inform selling strategy.[132] This information also permitted the directors to institute automatic disciplinary control mechanisms in Calcutta through the creation in Dundee of measures of individual mills' and their managers' performance.[133] For example, in 1902, the margin permitted in measuring jute in process and wastage was altered:

> Basis of monthly estimates:- In their letter the managing agents refer to the suggestion of the board that the monthly estimates should be cast on different lines so as, within the limits of safety, to approximate more closely to the actual profits, and they suggest that the following changes should be made, viz: 1. Gunny surplus to be reckoned at 1/2" instead of 1" per bag. 2. Jute batch to be debited at the actual worked during month. 3. Jute surplus to be reduced from 8% to 5%. 4. The

[129] MS 86/1/1/1, Samnuggur Co, MOTD, 18 Oct 1876, p. 53.

[130] MS 86/1/1/1, Samnuggur Co, p388, 10 Sep 1884.

[131] MS 86/1/1/1, Samnuggur Co, p. 4. 17 Sep 1874.

[132] MS 86/1/1, Samnuggur Co, MOTD, MS 86/3/1, Titaghur Co, MOTD, passim. Differentiated measures of hessian and sacking inputs and outputs started to be systematically reported from 1902, MS 86/1/1/8, Samnuggur Co, MOTD, p. 189, 7 May 1902; MS 86/3/1/7, Titaghur Co, MOTD, p. 176, 7 May 1902.

[133] The new Titaghur No. 2 mill results were reported separately from 1906, MS 86/3/1/9, Titaghur Co, MOTD, p. 400, 3 Jul 1906, the new Samnuggur North mill results from 1915, MS 86/1/1/15, Samnuggur Co, p. 146, MOTD, 5 May 1914.

> other factors to be computed as near the actual as possible. The board approved of these suggestions, the new method to be put in operation for July and onwards.[134]

A crucial aspect of this approach was the creation of reliable accounting measures which permitted the comparison of performance, first between Samnuggur, Titaghur and Victoria, and later between older and newer mills within and across the different companies. The systematic reporting of monthly performance for the purposes of monitoring had to be balanced against a contrary imperative to obfuscate the recording of the firm's performance in any medium that might be submissible in a court of law, and therefore was perceived as potentially detrimental in that it could lead to the disclosure of sensitive commercial information to shareholders or competitors. From 1904, this goal was facilitated by recording only the changes in the accounting entities recorded. Occasionally, a monthly result was omitted from the minutes. Whether intentional or accidental, this introduced discontinuities in the data, making it difficult to trace the firm's performance consistently over time.[135]

In addition to communication by letter, the steamship permitted the more frequent interchange of visits of managerial personnel from Calcutta to Dundee and of directors from Dundee to Calcutta. A system of annual performance monitoring was instituted whereby a director would be present at the annual stocktaking, a crucial measure of performance given the preponderance of the raw material on the asset side of the balance sheet.[136] This would have been impossible in the era of sailing vessels taking the route around the Cape. During the latter part of the 1880s, the promotion of William Smith to act simultaneously as a director of Thomas Duff & Co as well as its general manager, meant that the system of directors' visits fell into disuse and was only intermittent from his death in 1893 up to 1900. The system was then

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[134] MS 86/1/1/8, Samnuggur Co, MOTD, p. 214, MS 86/3/1/7; Titaghur Co, MOTD, p194 3 Jun 1902.

[135] Monthly results were omitted from the minutes for January, 1910, February, 1915, November, 1919, and August, 1920.

[136] See reference to Joseph Barrie's supervision of the stock taking, MS 86/1/1/1, Samnuggur Co, MOTD, p. 174. 25 Mar 1880.

resurrected and formalised into a system of annual visits on a rotating basis by the incoming Chairman of the board of directors of the mill companies – which was itself also instituted as a rotating position in order to ensure that no director monopolised information about Calcutta in the way that Alexander Scott had from 1893-1900, which precipitated a major episode of dissent amongst the directors leading to Scott's resignation. As illustrated in Table 3.15 below, regular visits in the other direction by commercial and production managers returning to Dundee on furlough were also systematised on a rotating basis so that the personal exchange of information on at least an annual basis could provide the opportunity to supplement the feedback received by means of official reports, while ensuring that the Calcutta office and the mills were not understaffed.

The careful selection of agents and the creation of detailed monitoring and communication systems by letter were a vital aspect of the transfer of technical knowledge and information between Dundee and Calcutta specific to a manufacturing multinational. In other respects, this was an inadequate medium of communication on its own. Jute manufacturing required a level of technical knowledge but it was also an industry that epitomised the creation of a global market in certain commodities and a parallel market for credit to finance the monetary flows required to permit these commodities to circulate. Just as the ramification of the railway network had connected the mofussil to the commercial nodes of urban trading centres in India to form a national market, the steamship connected these urban centres to a global trading network. And Naraingunge was connected to Dundee, Hamburg and New York, just as it was to Calcutta, in a system of embryonic global price formation via the medium of the telegraph.[137] A sale of 100,000 wheatbags to San Francisco three months forward can be taken as a typical transaction. Such a transaction involved a set of related calculations about price movements in a number of different markets – for raw jute, the value of the rupee against the dollar and

[137] Habib on grain markets

government policies that could affect it, the likely movement of freight rates and of the price and seasonal yield of Californian wheat, and the likely course of relative prices between present sales and future sales. Prices could be volatile in all of these markets and therefore any selling strategy required the use of the telegraph for the commercial manager to verify a selling decision with the Dundee directors. Communication by letter could only set the broad parameters of a selling strategy.

There remained an irresolvable contradiction between the dual use of the mails and the telegraph as complimentary media for communicating different types of information – there still remained a lag of several weeks between the receipt of summary information by telegraph and of detailed information by post which entailed that directors had to devolve authority and discretion for certain types of decision-making to the Calcutta managers.

Periods in which the directors requested additional information by telegram were succeeded by retrenchment in order to control costs:

> Telegrams:- The directors remarked on the unnecessary detail given in recent telegrams, and it was agreed to ask the managing agents in future to send only one telegram weekly to be despatched from Calcutta not later than 2pm on Wednesday of each week unless when there is anything special to communicate worth writing about.[138]

Change and Renewal on the Board of Directors.

Table 3.14 below summarises changes in the managerial hierarchy of Thomas Duff & Co and the Samnuggur and Titaghur mill companies over time, listing periods of service on the directorate and as chairman or secretary of the companies. It lists those instances where periods of service as a director of Thomas Duff & Co, the managing agents, were different to those on the directorates of the mill companies, indicating an attempt to preserve the

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[138] MS 86/1/1/6, Samnuggur Co, MOTD, p. 172, 2 Nov 1898.

exclusivity of the managing agents. Table 3.15 shows periods of service as the commercial manager of Thomas Duff & Co in Calcutta and the exchange of information through visits of the Dundee directors to Calcutta and of the Calcutta commercial managers to Dundee. Taken together, the tables indicate the creation over time of a career path where a commercial assistant would gain successive promotions - to become commercial manager in Calcutta, followed by a period of service as the companies' secretary in Dundee prior to promotion to the directorate in Dundee.

Table 3.14: Periods served on the directorate of the Thomas Duff & Co group, 1874-1921.

Director/ manager	**Director, Samnuggur & Titagur**	**Director, Thomas Duff & Co, (if different)**	**Chairman of Thomas Duff Group***	**Secretary, Thomas Duff Group, at Dundee HQ**
Thomas Duff	1874-1896		1874-96	
Alex Nicoll	1874-1893			
Joseph J Barrie	1874-1894			1874-1883
James Nicoll	1874-1915		1897-98, 1903	
Charles Kilburn	1874-1876	n/a		
William Moir	1886-1898	1895-98		
James Robertson1+	1886-1887	n/a		
William Smith	1892-1893	1886-93		
Alex C Scott	1893-1901		1899-1900	
Charles Barrie Ovenstone	1894-[1931]		1901-02, 07, 11 ,15, 20	
John Smith2+	1899-1909		1904	
George N Nairn	1899-[1932]		1905, 09, 14, 19	
Robert Sim	1902-1912		1906, 10	
David Stewart	1908-[1931]		1912, 17	1883-1908
Walter W Duff	1893-[1933]		1908, 13, 18	
John Nicoll	1913-[1926]		1916, 21	
Alex Wighton	1916-[1949]			1908-1916
James Robertson2+	[1926-1954]			1916-1926
Sir Alex R Murray KBIE CBE	[1933-1954]			

*Chairmen and secretaries served the same role simultaneously for Thomas Duff & Co and the mill companies. + James Robertson 1 & 2 were unrelated. John Smith2 was a different individual to the director of the Victoria Co.

Sources: MS 86/1/1, Samnuggur Co, MOTD; MS 86/3/1, Titaghgur Co, MOTD; MS 86/5/1, Thomas Duff & Co, MOTD.

Table 3.15: Visits of the directors to Calcutta, periods served as commercial manager of Thomas Duff & Co in Calcutta and visits to the directorate in Dundee, 1874-1921.

Director/ manager	Visit to Calcutta	Commercial Manager	Visit to Dundee
Thomas Duff	1875		
Alex Nicoll	1875, 77		
Joseph J Barrie	1879		
James Nicoll	n/a		
Charles Kilburn	[1874-76]*		
William Moir	n/a		
James Robertson1		1874-87*	1878, 85, 86
William Smith	[1886-93]*	1874-93	1881, 83, 87, 89, 92
Alex C Scott	1894, 97, 99		
Charles Barrie Ovenstone	1895, 1901, 06, 10, 21		
John Smith2	1903, 07		
George N Nairn	1900, 05, 09	1887-99	1882, 87, 93, 98
Robert Sim	1904, 08		
David Stewart	1895,1911		
Walter W Duff	1902, 12		
John Nicoll	1919	1899-06	1890, 97, 01, 04
Alex Wighton	1920	1906-08	1898, 1901, 05, 08
James Robertson2		1908-16	1903, 10
Sir Alex R Murray KBIE CBE		1916-21	1903

*James Robertson was a mill manager at Samnuggur and Titaghur. Other mill managers visited the directorate in Dundee but have been excluded as none of them were promoted to the directorate.

Sources: Ibid., Table 3.14.

Tables 3.14 and Table 3.15 demonstrate that there was a considerable degree of continuity and stability in the personnel of the directorate of the Thomas Duff & Co group. From four directors in 1874, with Joseph Barrie also acting as Secretary, the board expanded to six by the 1880s, the maximum permitted by the articles of association, with a full time secretary. The board was represented by just 18 directors over the course of 50 years. Only two directors resigned due to a disagreement on the board. Kilburn resigned due to 'inactivity', Alex Nicoll due to financial difficulties, and James Nicoll due to ill health. A further five died in office. James Nicoll served as a director for 41 years from the firm's inception but never recorded to have visited Calcutta. Of the 13 directors promoted to the board, eight were promoted internally from positions in the managerial hierarchy and four from networked firms. Of the latter, William Moir was the manager of the Royal Bank of Scotland in Dundee, the companies' British banker, Alex C Scott was a mill furnisher from Dundee who worked as a contractor in

Calcutta, and both Robert Sim and John Smith were the directors of the Naraingunge jute dealers R Sim & Co.. The first five general managers of Thomas Duff & Co in Calcutta were all promoted to the board.

The long term stability of the directorate came under pressure during the 1890s when three of the original directors and the Calcutta general manager died or resigned within a few years, leaving James Nicoll as the sole remaining founder. This raised the question of how the directorate renewed itself. The hybrid nature of the firm, combining the form of a public limited company with aspects of “family capitalism”, is attested to by the way in which some of the new directors ‘inherited’ their positions. When bankruptcy forced Alex Nicoll, to relinquish his shareholdings in 1892, he sold his shareholding to William Smith, the general manager and a director, who was also his son-in-law, and to Smith’s brother John, a partner in the networked firm Robert Sim & Co. John Smith was appointed a director in 1899 when he retired from India. On Joseph Barrie’s death in 1894, he was succeeded as a director by his nephew and business partner in JJ Barrie & Co, Charles Barrie Ovenstone. Walter W Duff assumed a seat on the board in 1893, a few years before the death of his father, the Chairman, Thomas Duff, after serving a short apprenticeship as a commercial assistant in Calcutta at the beginning of the 1880s. However, Walter W Duff did not inherit the whole of his father’s very large shareholding. Thomas Duff also transferred a sufficiently large shareholding to Alex C Scott before his death for Scott to join the board. Scott’s credentials were rather more meritocratic – based on his business links to Calcutta as a mill furnisher.

The examples of inheritance given above are not intended to suggest that the directorate of the firm operated as a nepotistic clique. Indeed, Walter W Duff was the only immediate kin member to be appointed in this way. All the other appointees to the board mentioned had significant business experience to justify their appointment in addition to a family connection in most cases.

The element of familial heredity characterising promotions to the directorate during the 1890s became much less pronounced as the capital base of the firm became broader from around the turn of the century. This is demonstrated by the career path taken by many of the sons of the founder directors entering business at around this time, as illustrated in Table 4.1 in the following chapter, which presents data showing the large proportion of sons of the Thomas Duff & Co directors recruited by the networked firm, R Sim & Co, and also by some of the other jute and gunny brokers in Calcutta. This cohort of sons was too young to be considered for the promotions described during the 1890s. Two of Alex Nicoll's sons, three of James Nicoll's, and one of David Stewart's found positions in Calcutta in this way, of whom at least three served an apprenticeship as a mill clerk in one of the Thomas Duff & Co group's mills. Two died prematurely from tropical diseases. None of them appears to have had the ability or the patience to seek promotion to the board through the managerial hierarchy in Calcutta, which became the sole means of promotion to the Dundee board after Robert Sim's appointment in 1902. The pitfalls of relying on family ties to select competent agents in Calcutta by Dundee firms organised as private family partnerships – as described above in the cases of Luke family – were better avoided by Thomas Duff & Co.[139] Family connections were important in the reproduction of ownership and control by family networks interested in the Thomas Duff & Co group, but family ties were increasingly subordinated to an impersonal, professional managerial hierarchy based on merit and experience. As the study of shareholdings below makes clear, this is not to suggest that the families of the founder directors meekly relinquished their interest in the firm, but their interest was increasingly retained on a rentier basis as large shareholders rather than through active participation in the direction of the firm. Thus, in some ways, Thomas Duff & Co's evolution, combining the adoption of public

[139] Cox Brothers also experienced problems in their selection of a brother of the partners, Henry Scott Cox, and of a nephew William James Cox, who proved to be incompetent agents in the running of their Calcutta subsidiaries. See correspondence from 1869-82 in UDA, MS 66/2/2/1, Cox Brothers Ltd, Letterbook.

ownership with a professional managerial hierarchy preceded its Dundee competitors by decades. While limited liability was widely adopted by Dundee jute firms from the 1890s, shareholdings remained tightly controlled until the restructuring of the industry with the formation of the Jute Industries combine in 1919.[140]

The Incorporation of the Victoria Co into the Thomas Duff & Co group, 1888-1918.

Table 3.16 depicts the directorate and managerial hierarchy of the semi-autonomous Victoria Co until its effective consolidation into the group in 1918, when the Victoria directorate ceased to be distinguishable from those of the other firms.

Table 3.16: Management of the Victoria Co, 1874-1921, (those with a prior affiliation to Thomas Duff & Co (TD) in bold).

Director/ secretary	**Chairman**	**Visit to Calcutta**
John Smith1, 1883-1910	1883-1903	1894
Angus MacIntyre, 1883-1884		
James Luke, 1883-1888		1880s
John Adamson, 1884-1893		
William B Thompson, 1884-1892		1891
Alex Nicoll (TD), 1888-1909		
John W Shepherd, (Sec 1883-1918)		
William Smith (TD), 1892-1893		
David W Wybrants, 1893-1921		1895, 1905, 1907
Alex B Gilroy, 1893-1918	1903-15	
John B Clark, 1909-1919	1916	1910, 1912
David Hynd, 1910-[1931]	1917-18, 1921	
Chas Barrie Ovenstone (TD), 1919-[1931]	**1919**	**1921**
Alex Wighton (TD), 1919-[1949]	**1920**	**1920**
George N Nairn (TD), 1920-[1932]		
Jas Robertson2 (TD) (Sec, 1917-[1926])		

Sources: MS 86/2/1, Victoria Co, MOTD; MS 86/5/1, Thomas Duff & Co, MOTD.

How did the Victoria Co lose its autonomy despite its initial commitment that the company "shall always be and remain as at present under the direct control of the directors"?[141] As

[140] Gilroys were exceptional in publicly listing shares from the 1890s. Other firms took limited liability but remaine private companies. Walker, *Juteopolis* discusses the formation of Jute Industries.

[141] MS 86/2/2/1, Victoria Co, "Minute of Agreement referred to in minutes of December 19th, 1888", pp. 447-50.

outlined above, the departure of the Lukes from the management of the Victoria Co in 1888 smoothed the way for the agency agreement with their rivals, Thomas Duff & Co. Alex Nicoll joining the board of the Victoria to represent the new managing agents' interest in the firm. As a gesture of goodwill that the managing agents were safeguarding the interests of the Victoria Co, the Titaghur Co provided the Victoria Co directors with a copy of their confidential balance sheet for the purpose of comparison in 1890.[142] The gesture was reciprocated by the Victoria Co making a loan to the Titaghur Co of £2,500 at 4.5% to help them reduce their overdraft.[143] The renewal of the agency agreement for a further five years appears to have been a straightforward matter, as it was not referred to in the minutes of Thomas Duff & Co.[144] William Smith, the Calcutta general manager of Thomas Duff & Co, joined the board of the Victoria Co, as well as the Samnuggur and Titaghur Cos, when he retired from Calcutta in 1892, although directors with no affiliation to Thomas Duff & Co remained a majority on the Victoria board. However, the relationship was not without tension. WB Thompson, owner of Dundee 's Lilybank foundry which was engaged in shipbuilding and marine engine manufacture, probably joined the board of the Victoria Co in order to seek a source of demand to diversify into the manufacture of engines for jute mills. At a meeting of the Victoria board of directors in 1893 attended by Thompson, as well as William Smith and Alex Nicoll, (the Thomas Duff affiliated directors), the minutes record that Thompson's tender for a new engine contract was rejected in favour of Carmichael, a favoured supplier of Samnuggur and Titaghur. Thompson resigned

[142] MS 86/3/1/2, Titaghur Co, minute of AGM, p. p162, 26 Feb 1890.

[143] MS 86/3/1/3, Titaghur Co, MOTD, p. 58, 19 Oct 1892.

[144] The first minute book of the Victoria Co up to 1892 has not survived, which would have made reference to the renewal of the agreement. The period of this agreement is referred to in the minute of 1896 renewing the agreement for a second time, MS 86/2/1/1/1, Victoria Co, MOTD, pp. 163-5, 1896.

on the spot.[145] His replacement was a figure of equal power and influence in Dundee, Alex Gilroy, who could be relied on to be a counterweight to the influence of Nicoll and Smith.[146] Shortly after Thompson's resignation, Alex Nicoll resigned his positions as a directors of the Samnuggur and Titaghur Cos and Thomas Duff & Co after having to sell all his shares to pay his creditors in bankruptcy proceedings.[147] The Courier commented that "Mr Nicoll's embarrassments are understood to result from other business than the local industry in which he was so largely engaged."[148] This may have referred to speculative trading in raw jute; unpredictable price movements combined with the lack of bank liquidity to tide over merchants in difficulty, cut a swathe through the ranks of Dundee's merchants during this period, including well known traders such as Lipman & Co[149], and James Luke of Kinmond, Luke & Co.[150] After liquidating his interest in the Barrow Jute Co[151] as well as his shareholdings, he was only able to raise £18,000 of the £90,000 owed to his creditors, repaying 4 shillings to every pound of debt owing.[152] Nicoll was probably already in difficulty a year previously when,

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[145] MS 86/2/1/1, Victoria Co, MOTD, p. 12, 3 Jan 1893.

[146] Alexander Gilroy of Ballumbie was the son of Robert Easson Gilroy, founding partner of Gilroy Bros, the third largest jute firm in Dundee. He inherited the mercantile side of Gilroy Bros' business on the death of the last founding partner in the early 1890s, renamed Alex Gilroy & Co. His cousin Alexander Bruce Gilroy, son of George Gilroy Sr, continued to run the Tay St Works, which was floated as Gilroy, Sons & Co Ltd. See Alex Gilroy obituary, "Death of a Dundee Merchant", Scotsman, p. 4, 17 Jun 1919 ; Alexander Bruce Gilroy obituary, "Death of a well-known Dundee Man", Scotsman, p. 5, 15 Nov 1923.

[147] "Directorate:- The transfers above minuted clear out the entire holding of Mr Alexander Nicoll in the company and, in terms of sections 64 and 94 of the articles of association, his appointment as a director of the company has ipso facto been vacated." MS 86/3/1/3, Titaghur Co, MOTD, p. 139, 12 Apr 1893.

[148] "Difficulties of a Dundee Manufacturer", *Dundee Courier*, 24 Apr 1893. Nicoll also had at least £15,600 of his capital locked up during the 1880s in the shares of the Oregonian Railway, (and an unspecified further amount in bonds), which was embroiled in legal disputes in the American courts until its liquidation in 1889, "List of Shareholders", *Dundee Courier*, 8 Mar 1889, p. 5, "Oregonian Railway. Meeting of Bondholders.", *Dundee Courier*, 13 Mar 1889.

[149] Lipman failed owing £250,000, "Heavy Failure in the Jute Trade", *Times of India*, p. 5, 15 Dec 1892.

[150] "The announcement today that the old-established and much respected firm, Messrs Kinmond, Luke & Co, had been compelled to suspend payment, quite paralysed the market" in "Dundee Trade Report", *Dundee Courier*, p. 4, 12 May 1894.

[151] Dissolution of partnership with Robert Peter, *London Gazette*, p. 4726, 18 Aug 1893.

[152] "A Dundee Manufacturer's Difficulties", *Dundee Courier*, 26 Apr 1893. The partnership in the Dundee firm A & J Nicoll, owners of the South Ward Works, was also dissolved, James Nicoll remaining as sole partner, "Notice", *Dundee Courier*, p. 1, 2 Jun 1893.

in an extremely rare case of disagreement on the board being put to a vote, the Titaghur Co voted to make a voluntary call on uncalled capital supported by Thomas Duff, Joseph Barrie and William Moir, with Nicoll and his brother opposed.[153] It was unclear whether Nicoll's departure was acrimonious. The evidence suggests otherwise as he was permitted to retain a substantial shareholding to access the lucrative rental income of Thomas Duff & Co, the managing agents. Having sold his individual shares to the other directors, they transferred back a number shares to be held jointly with his wife.[154] Nicoll continued to hold sufficient shares to remain a director of the Victoria Co with a continued interest in the prosperity of Thomas Duff & Co.[155]

References to sales in the minute books confirm that Thomas Duff & Co made sales from the pooled output of the three mill companies.[156] An example of the financial facilities afforded to the Victoria Co by the agency agreement of 1888 and subsequent agreements was outlined in 1893, when £5,000 was remitted from Thomas Duff & Co in Calcutta to the Victoria Co Dundee, the former specifying that the "facilities to be accorded to them [the Victoria Co] by way of finance are not to exceed £15,000 and to be applied only for the purchase of jute or for the holding of goods which may be in stock."[157] The views of the Victoria directors did not always accord with those of the other mill companies. When the directors of Samnuggur and Titaghur found themselves in disagreement with their Calcutta agents in advocating a continuation of short time working, the Victoria directors followed the advice received from

[153] Motion "allowing shareholders who may be so disposed the option of paying up the unpaid portion of their shares in full and entitling them to rank for dividend", MS 86/3/1/2, Titaghur Co, MOTD, p. 427, 8 Mar 1892.

[154] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 125, 11 Oct 1893, and p. 147, 17 Oct 1894.

[155] Shareholder list in MS 86/2/1/1, Victoria Co, MOTD, pp. 228-231, 29 Jan 1898.

[156] MS 86/1/1/3, Samnuggur Co, MOTD, p. 398, 6 Jan 1892; MS 86/1/1/4, Samnuggur Co, MOTD, p. 357, 25 Apr 1894.

[157] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 125, 11 Oct 1893.

Calcutta in advocating a return to full time working, (although the Samnuggur and Titaghur directors fell into line a couple of weeks later).[158]

Over time, the establishment of trust between the Victoria Co and Thomas Duff & Co served as the basis for a flexible approach to the occasional renegotiation of the terms of existing managing agency agreements. In 1896, the Victoria Co directors sought an increase in the rebate from Thomas Duff & Co on their commission payment from £300 to £500 annually as a concession to the larger volume of business being done that had increased the agents' remuneration. Thomas Duff & Co declined to increase the rebate on the basis that the increased volume of business done on Victoria's behalf had increased their costs. However, they agreed to increase the Victoria Co's credit facilities to £17,000 a couple of weeks later.[159] It was no accident that this request was made as the firms entered the final year before the agreement was to be renewed, putting the agents on notice that the independent board of the Victoria Co could make the credible threat implicitly of taking their business elsewhere. No such representations could be made by the Samnuggur and Titaghur Cos as their boards were identical with that of Thomas Duff & Co[160]. In the event, a third agreement was made for a further seven years from the beginning of 1897. The incremental lengthening of the duration of the agreements – three years, then five, then seven – indicated the deepening of trust between the parties. A 3% commission would continue to be paid but the rebate was increased to £700 annually. Thomas Duff & Co also agreed to commit themselves further financially in obtaining the Victoria Co's stock of jute. The Victoria directors wrote to Thomas Duff & Co:

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[158] MS 86/2/1/1, Victoria Co, MOTD, p. 44, 26 Dec 1893; MS 86/1/1/4, Samnuggur Co, MOTD, p. 279, 13 Dec 1893.

[159] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 177 18 Dec 1895, and p. 179, 8 Jan 1896.

[160] There is no record of a shareholder expressing dissatisfaction at a general meeting about the terms of an agency agreement throughout the period of this study

> It is understood that during the currency of the agreement you will grant us whatever facilities are required for the purchase of jute or the holding of goods over which you will of course have a lieu, and that you make us the usual abatement for the year now current.
>
> It is also part of the agreement that you will furnish us regularly and promptly with copies of all telegrams from Calcutta except in so far as they refer to your own private business, and we in turn will keep you regularly and promptly posted up as to what we are doing.
>
> We have been perfectly satisfied with the manner in which our business has been conducted in the past by your Calcutta friends and have every confidence that it will continue to command their best attention.[161]

The Dundee directors continued to maintain a careful demarcation of the boundaries of the principal-agent relationship, and the sovereignty of the Calcutta office to make decisions "in the normal course of business" in the absence of explicit instructions to the contrary by the Victoria directors:

> It appears from the correspondence between the Victoria Company and the Calcutta office that the former have been reflecting on the action of the Calcutta office both as to buying jute and selling goods, and it appeared to the directors that there was no good cause for such reflections. It was agreed to advise the Calcutta office to make a point of wiring direct to the Victoria Company in every case where they have the slightest doubt as to their wishes either as to buying jute or selling goods, and thus obviate any such reflections for the future.[162]

Thomas Duff & Co stood to benefit from the steady upswing in trade that led the Victoria Co to commit to issuing £100,000 worth of preference shares to finance "an additional mill and factory capable of containing 200 hessian looms with corresponding preparing and spinning machinery."[163] The decision led to a rare display of dissent by the Victoria Co's shareholders. At the emergency general meeting called to ratify the decision, William Brownlee, a substantial

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[161] MS 86/2/1/1, Victoria Co, MOTD, p. 156, 21 Jul 1896, quoting letter to Thomas Duff & Co dated 16 Jul 1896.

[162] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 213, 21 Apr 1897.

[163] MS 86/2/1/1, Victoria Co, MOTD, p. 192, 14 May 1897.

Dundee builder and former Provost of Dundee[164], proposed an amendment - 'That the whole matter be delayed for six months.', seconded by the jute manufacturer Alexander Henderson. 18 shareholders were present representing 2310 votes, with a further 4515 proxy votes registered in advance in favour of the directors' proposal. The amendment only mustered 543 votes.[165] The minute does not record what the basis was for the dissent. It may have been based on a disinclination to take up preference shares without ordinary shares being issued in tandem. On the other hand, some of the Victoria shareholders were prominent personalities in Dundee and may have been concerned about the reputational effects of voting for extensions in Calcutta at the time when a debate was raging in Dundee about the negative impact of the growth of Calcutta competition.[166] What the episode does illustrate is the increasing coincidence of long-term planning between Thomas Duff & Co and the Victoria Co, £100,000 of additional capital being raised by the Titaghur at the same time.[167] Furthermore, Thomas Duff & Co benefited from the reluctance of the Victoria shareholders to take up the new shares. A minute of the Victoria Co stated:

> The secretary intimated that after consultation with Mr Gilroy [the Chairman], he had wired to Mr AC Scott [the Chairman of Thomas Duff & Co, then visiting Calcutta] as follows, viz:- 'May we allot shares as many as possible to outsiders'. To which the following reply had been received, viz:- 'It is impossible, we are committed already here.[168]

This may be a reference to Scott promoting the Titaghur Co's new shares issue in Calcutta. In the event, Thomas Duff & Co's directors were able to increase their own shareholding in the Victoria Co to 13% of the total compared to 21% held by the Victoria directors.[169]

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[164] Alexander Hastie Millar, *Roll of Eminent Burgesses of Dundee, 1513-1886* (Dundee, 1887), p. 291.
[165] MS 86/2/1/1, Victoria Co, minute of EGM, p. 196, 11 Jun 1897.
[166] See Gordon Stewart, Jute and Empire, (Manchester, 1998), Chapter 2, pp. 62-74.
[167] MS 86/3/1/4, Titaghur Co, MOTD, p457 10 Aug 1897.
[168] MS 86/2/1/1, Victoria Co, MOTD, p. 225, 11 Jan 98.
[169] Calculation based on list in MS 86/2/1/1, Victoria Co, MOTD, pp. 228-231, 29 Jan 1898.

The appointment of mill supervisors to staff the Victoria mill was one aspect of the Victoria Co's operations which fell within their remit under the managing agency agreement. This was a critical power they retained if they were to safeguard their ability to monitor the mill's performance independently of the managing agents. However, with this power came the responsibility to judiciously select competent agents involved directly in the oversight of the manufacturing process in Calcutta. The location specific knowledge of the manufacturing process in Calcutta became qualitatively differentiated from that in Dundee, which meant that these skills were not necessarily transferrable from Dundee. The boards of Samnuggur and Titaghur had an advantage over Victoria in being able to draw on information from their Calcutta managers to select competent production managers for internal promotion. Thomas Duff & Co were not slow to draw this to the Victoria directors' attention in 1898, when they were seeking a replacement for their experienced mill manager, George Duncan, due to chronic illness. They minuted receipt of a:

> […] private message from Mr [John] Nicoll, [general manager of Thomas Duff & Co], asking if the Victoria Company had referred here [in Dundee] as to a temporary arrangement for the management in consequence of Mr Duncan's continued serious illness. [The Dundee directors had not been consulted.] A further informal meeting was held on 1st current at which it was agreed to wire Mr Nicoll privately that the directors are strongly of opinion that it will be better to avoid recommending any of the staff of the other mills[, i.e. Samnuggur and Titaghur,] to the Victoria Company.[170]

The Thomas Duff & Co had made their point to the Victoria directors that their independence did not come without costs. After the third renewal of the managing agency agreement in 1900 – for a further period of 13 years – confirmed that the Victoria Co's affairs would remain within the ambit of Thomas Duff & Co's management for the foreseeable future, the managing agents adopted a more conciliatory approach. The Samnuggur assistant manager Fettes was

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[170] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 261, 2 Nov 1898.

permitted to take a promotion as the new manager at the Victoria mill - "the directors [of Samnuggur] consider it a good policy that capable assistants should not be barred from promotion where the opportunity occurs."[171] The firms also agreed that contractual terms for mill assistants should be harmonised across the three mill companies:

> [The Chairman of Thomas Duff & Co, Charles B Ovenstone, and the Secretary, David Stewart, called on the Victoria Co] for [the] purpose of ascertaining their views, it being desirable that all the three mills for which this company acts as managing agents should co-operate on similar lines. He stated that the Victoria Company had already written to Calcutta authorising the same arrangements to be made for their assistants as may be adopted by the other two companies.[172]

During the decade from 1901-10, the Victoria mill paid an average 7.5% dividend, lagging behind Samnuggur and Titaghur, which paid 10% every year, (except 1903 when Samnuggur paid 6%).[173] In 1906, the Chairman of Thomas Duff & Co , George Nairn, wrote to his fellow directors in Dundee after visiting the Calcutta mills that "notwithstanding the extra and special help which the Calcutta office was giving them", he attributed "the trouble [with the Victoria mill] mainly to the works management not being equal to the size of the place."[174] A further letter from Nairn stated that there was:

> […] still no prospect of a permanent improvement in the working of the Victoria mill, and [...] that the whole trouble was due to the present works management, and that there was no indication of the present manager being able to run the place successfully. [... The Victoria Co directors] had advertised as requested for a new manager, but [...] all the applicants were mediocre with no previous experience of management and none of them so suitable as James Shepherd, presently preparing overseer at Titaghur, who keenly solicited promotion.[175]

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[171] MS 86/1/1/7, Samnuggur Co, MOTD, p. 159, 12 Dec 1900.
[172] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 161, 12 Mar 1902.
[173] MS 86/1/5/5/1-18, Samnuggur Co; MS 86/2/5/5/1-18, Victoria Co; MS 86/3/5/5/1-23, Titaghur Co; Reports of the directors, balance sheet, working account and profit and loss account.
[174] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 346, 30 Jan 1906.
[175] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 348, 20 Feb 1906.

Shepherd was appointed by the Victoria directors to manage the mill on their agents' recommendation. The Thomas Duff & Co directorate impressed on their Calcutta managers that the correspondence on the matter from the Victoria Co:

> […] inferred a responsibility on the managing agents not covered by the terms of the agreement inasmuch as the appointment of the works staff rests with the Victoria board and all appointments are made by them. The secretary was instructed to point this out to the Calcutta office, and to ask them to put very strongly before the Victoria Company the efforts that are made to safeguard their interests.[176]

Shepherd was able to bring the Victoria mill's results into line with the other mills[177], and gained a further promotion to manage the Titaghur mill in 1914, and then was sent to the new Samnuggur North mill in 1915 to resolve problems of underperformance there.[178] After Shepherd's appointment in 1906, transfers of mill managers and assistants between Samnuggur, Titaghur and Victoria became routine, eroding further the independence of the Victoria directorate.[179]

The third renewal of the managing agency agreement between the Victoria Co and Thomas Duff & Co was referred to at the latter's Annual General Meeting of 3rd April, 1901. The renewal occurred only three years into the previous agreement for seven years due to "special circumstances". The "circumstances" involved the resignation the previous week of Alex C Scott as Chairman of Thomas Duff & Co and of Samnuggur and Titaghur. This was glossed over in the minute, which referred in anodyne terms to the fact that a "considerable extension of the producing power of the companies for which this company acts as managing agents has

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[176] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 348, 20 Feb 1906.

[177] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 379, 31 Jul 1906, and p. 388, 16 Oct 1906.

[178] MS 86/3/1/14, Titaghur Co, MOTD, p. 95, 28 Oct 1913; MS 86/1/1/15, Samnuggur Co, MOTD, p. 266, 24 Nov 1914.

[179] See, for instance, the career path of Alexander Williamson, employed as a mill mechanic at Samnuggur mill until his appointment as assistant manager of Victoria mill in 1907, MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 438, 8 Oct 1907. He was promoted to the manager position at Titaghur in 1917, MS 86/3/1/15, Titaghur Co, MOTD, p. 378, 19 May 1917.

recently taken place, and a further extension of same is in progress", as the cause of the renegotiated terms of the agreement.[180] Scott's departure is considered in more detail below but a plausible explanation of the coincidence of Scott's resignation and the hasty renegotiation of concessionary terms for the Victoria agency on a reduced commission was that it was intended to pre-empt the possibility of Scott forming his own managing agency with the intention of poaching the business of the Victoria Co from Thomas Duff & Co. The new agreement was "for a currency of thirteen years from 1st January last, also at a commission of 2½% on the net value of the manufactured productions of the company", reduced from 3%. New agreements with Samnuggur and Titaghur were concluded simultaneously at the same reduced rate, but with a currency of 20 years.[181]

The increased time horizon of the agreements reflected the renewed upswing in the fortunes of the Calcutta industry from the mid-1890s, which led to a sustained boom in mill extensions and the formation of new mill companies there that continued until the beginning of the 1920s.[182] As a residue of the legal dispute of the 1880s between the Samnuggur and Victoria Cos, the Samnuggur now projected extending their works to a new compound at Bhudressur on the opposite side of the river adjacent to the Victoria mill, next to the Grand Trunk Road, on plots of land acquired to stymie the original construction of the Victoria mill. However, this conflicted with the Victoria mill's own expansion plans. Evidently, the urgency with which Thomas Duff & Co had sought to commit the Victoria directors to a new agreement had prevented them from negotiating a compromise over land for extending the mills. Instead, as part of the new agreement's terms, they had conceded to the Victoria Co on behalf of the Samnuggur Co a clause:

[180] MS 86/5/1/2, Thomas Duff & Co, minute of AGM, p. 130, 3 Apr 1901.
[181] MS 86/5/1/2, Thomas Duff & Co, minute of AGM, p. 130, 3 Apr 1901.
[182] See Table 2.3.

> […] stipulating that this company should undertake to hold the properties of Bhudressur and Bablaband and not to dispose of them without the Victoria Company's consent. An undertaking has already been given the Victoria Company per letter of 24th September that in the event of this company building another mill without the consent of the Victoria Company the agency agreement will be null and void in the option of the Victoria Company.[183]

By 1902, Thomas Duff & Co were seeking to have this stipulation removed to permit Samnuggur to extend, arguing that external economies in relation to the labour supply would benefit the Victoria Co:

> The directors had some conversation as to the expediency of arranging to erect a new mill on this site provided the Victoria Company consent to remove the bar under the current agreement with them. In view of the unsatisfactory state of the labour both at Samnuggur and Victoria and the experience obtained at Titaghur where labour has continued highly satisfactory since the erection of several mills in the proximity made it an important labour centre, the board felt that it might improve the labour supply both of Samnuggur and Victoria if the labour employment of the district were increased. The chairman and the secretary were asked to confer with [the Victoria Co Chairman] Mr Gilroy as to this.[184]

Predictably, Gilroy was "averse" to conceding the leverage Victoria had over Thomas Duff & Co in the matter.[185] The following month, the Victoria Co countered with a proposal that Thomas Duff & Co should "sell them the Bhudressur property cheap" for their own extension but this was deemed "inexpedient" and the Calcutta general manager John Nicoll, was instructed to "recommend the Victoria Company to build on their own compound."[186] When Walter Duff visited Calcutta at the end of the year, he further advised Nicoll not to borrow money from the Victoria Co, presumably to avoid weakening Thomas Duff & Co's negotiating position. The same minute went on to state "it appears likely that the Victoria Company will not for some

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[183] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 91, 17 Oct 1900.
[184] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 171, 9 Apr 1902.
[185] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 177, 17 Jun 1902.
[186] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 182, 23 Jul 1902.

time agree to remove the bar under the present agency agreement as to utilising the Bablaband and Bhudressur properties for the erection of a new mill" and that Duff's pursuit of sites such as the Government of India's disused rifle range at nearby "Ichapur" had so far proved fruitless, while an alternative site in the neighbourhood at Walter's Court ran the risk of further erosion of the river bank, leading him to look as far afield as Titaghur.[187] The matter was concluded for the time being when the Victoria Co sought a further rebate on their commission in return for extending Victoria on its existing compound "on lines somewhat similar to the recent enlargement of Samnuggur". Thomas Duff & Co offered a further rebate of £500 annually in return for dropping the bar on Samnuggur erecting a mill on the Bablaband/Bhudressur site, to which the Victoria Co responded with "regret that the directors [of Thomas Duff & Co] had not seen their way to make them a more liberal offer. It was agreed to let the matter rest for the present."[188]

Finally, in 1908, the bar was removed on the recommendation of a Victoria director on a visit to Calcutta:

> Mr Wybrants, after examining into the matter and investigating the labour question at centres where there are several mills, was convinced that it would be an advantage to the Victoria Company if there were more mills in the vicinity, and that he was agreeable to the bar, which, under the present agency agreement applies to this property, being removed.[189]

While Thomas Duff & Co's directors argued that the Victoria Co should remove the bar "in their own interests", they ultimately agreed to pay them a consideration of £500 annually.[190] It cannot have harmed Thomas Duff & Co's cause that Wybrants' independence had been compromised in 1901 when he was offered and accepted a 4% shareholding in Thomas Duff &

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[187] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 196, 16 Dec 1902, and p. 203, 20 Jan 1903..
[188] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 210, 13 Feb 1903, and p. 212, 24 Feb 1903.
[189] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 7, 7 Jan 1908.
[190] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 7, 7 Jan 1908, and p. 38, 18 May 1908.

Co just as the land negotiations were being anticipated, although, presumably, he declared the conflict of interest.[191]

A footnote to this episode illustrates the sleight of hand in which managing agents could engage when the same personnel occupied the boards of the managed companies. Thomas Duff & Co had purchased the Bhudressur/Bablaband site from Samnuggur in 1901 pending the negotiations with the Victoria Co.[192] When construction of the Samnuggur North mill finally commenced in 1913, "neutral arbiters" were appointed to assess the market valuation of the site. Land values had considerably appreciated in the meantime due to the demand for new sites for mill construction and the property was sold back to the Samnuggur Co for "£22,622-18-8, representing an appreciation on the book value of £11,262-5-8", a 99% windfall for the Thomas Duff & Co directors![193]

The fourth renewal of the Victoria agency agreement was concluded six months before the existing 13 year agreement expired at the end of 1913. It marked a significant departure from the terms of previous agreements, reflecting the keen competition in the Calcutta market for agency contracts as the industry boomed. Thomas Duff & Co's management was extended for only a further five years and the lucrative sales commission was dispensed with in favour of the type of profit-based remuneration that had become the norm amongst the rupee mills:

a fixed sum of £6000 per annum from the Victoria Company, less a rebate of £1000 per annum, payable monthly in Calcutta at 1-4d exchange, and also a commission of 5% on the net profit shown by their working account, this commission to be payable in Dundee when the accounts have been made up. The form of working account to be adhered to by the Victoria Company is as shown by their printed accounts for the year 1911, while it is also stipulated

[191] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 121 27 Mar 1901.
[192] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 75, 28 Aug 1900, and p. 91, 17 Oct 1900.
[193] MS 86/1/1/14, Samnuggur Co, MOTD, p. 330, 18 Mar 1913.

that in the event of the Victoria Company increasing their looms at any time the fixed sum of £5000 net per annum will be increased in proportion.[194]

As Table 3.16 below illustrates, Thomas Duff & Co's remuneration from the Victoria Co was approximately halved relative to Samnuggur and Titaghur as a result of the adoption of the profit-based commission.[195] This would have served as an added incentive to complete the effective takeover of the Victoria Co that transpired in 1918.

Table 3.17: Comparison of managing agency remuneration of Thomas Duff & Co managed mills, 1911-21, rupees per loom, (constant prices, 1873 = 1).

Year	Samnuggur /Titaghur average	Victoria	Ratio Victoria: others
1911	108	128	119%
1912	124	152	123%
1913	145	177	122%
1914	105	50	47%
1915	148	80	54%
1916	193	96	50%
1917	156	83	53%
1918	228	132	58%
1919	132	72	55%
1920	163	171	105%
1921	94	88	94%

Sources: Calculated from MS 86/1/5/5/1-18, Samnuggur Co; MS 86/2/5/5/1-18, Victoria Co; MS 86/3/5/5/1-23, Titaghur Co; Reports of the directors, balance sheet, working account and profit and loss account.

The consolidation of the Victoria Co occurred abruptly over the course of 1917-18. The change can be explained by attrition on the Victoria board as a result of old age. During the course of 1916, Alex Gilroy, by far the largest shareholder[196], had given up the Chairmanship of the

[194] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 225, 22 Apr 1913.

[195] Caution is required in drawing inferences about the variation between mills on the sales commission measure. The data would require to be weighted for variation between mills in terms of their relative hessian to sacking loom ratio in order to draw out underlying differences in productivity.

[196] MS 86/2/1/4, Victoria Co, MOTD, pp. 194-202, October, 1919. His inventory records a 4% shareholding in the Victoria Co's ordinary capital, or 1200 shares with a nominal value of £12,000 and a market value of £40,200, Alexander Gilroy, inventory SC45/31/85 registered at Dundee Sheriff Court, 18 Sep 1919, pp. 453-70.

Victoria Co which he had occupied since 1903.[197] By 1917, when he retired, he was 75.[198] His replacement as a director was the longstanding Secretary of the company, John Watson Shepherd, who was himself 72.[199] Watson retired during the same year.[200] The very substantial honorarium of £3,500 that he was voted upon retiring from the board, (of which Thomas Duff & Co paid £1,500), no doubt served as an inducement.[201] Of the remaining directors, Wybrants' allegiance was divided. Despite being appointees under Gilroy's chairmanship, David Hynd and John Brown Clark's backgrounds in the Calcutta business world may have meant that they did not share the departing directors' commitment to maintaining the Victoria Co's independence. Both had acquired shares in the Titaghur mill prior to its new share issue in 1919.[202] Charles Barrie Ovenstone, the most senior of the Thomas Duff & Co directors, was elected to the board of the Victoria Co on Shepherd's departure, and James Robertson became Secretary of all three mill companies as well as Thomas Duff & Co.[203] Upon the death of John B Clark the following year, another Thomas Duff & Co director, Alex Wighton, also joined the Victoria board.[204] In 1918, a new managing agency agreement was concluded on notably more generous terms to Thomas Duff & Co than the preceding one, with a return to a sales-based commission of "two per cent on the net invoice amounts of the manufactured products of the Victoria Company" for a further 10 years, with an increase in the notice period required before

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[197] MS 86/2/5/5, Victoria Co, Annual Reports to the shareholders, 1903-17.

[198] MS 86/2/5/5, Victoria Co, Annual Reports to the shareholders, 1917; Alex Gilroy obituary, "Death of a Dundee Merchant", Scotsman, p. 4, 17 Jun 1919.

[199] "Former Dundee businessman. Death of Mr John W Shepherd.", *Dundee Advertiser*, 23 Jan 1929.

[200] MS 86/2/5/5, Victoria Co, Annual Reports to the shareholders, 1917.

[201] MS 86/2/1/4, Victoria Co, MOTD, p. 9, 9 Apr 1918; MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 361, 9 Apr 1918.

[202] John Brown Clark had a business relationship with Thomas Duff & Co in Calcutta, who purchased raw jute from his firm Landale, Clark & Co and had acted for them to fix an "independent" valuation of the Bablaband site transferred from the Samnuggur Co to Thomas Duff & Co in 1906, MS 86/5/1/2, Thomas Duff & Co, p. 357 13/3/06. Hynd had acquired 100 shares of the Titaghur Co as early as 1908, MS 86/3/1/11, Titaghur Co, p. 180, 3 Nov 1908.

[203] MS 86/2/5/5, Victoria Co, Annual Reports to the shareholders, 1917.

[204] MS 86/2/5/5, Victoria Co, Annual Reports to the shareholders, 1918.

the early termination of an agreement to 12 months from six.[205] The firm's Articles of Association were changed subsequently in 1919 in relation to directors' votes, the minimum shareholding qualification for directors and the rate of preference shares to bring the firm into line with the Samnuggur and Titaghur Cos. The directors' motion effecting these changes at the Emergency General Meeting of that year did not pass unanimously, but the pill was sweetened by the capitalisation of the reserve fund accumulated during the war to fund the issue of £300,000 in bonus shares on a pro rata basis to the existing shareholders.[206]

By the time the bonus shares were issued in 1919, a comparison of the shareholders in the Victoria Co and the Titaghur Co of that year indicates that the convergence in the management of the firms was mirrored by a convergence in ownership. In 1883, only one shareholder in the Victoria Co had also held share in Samnuggur or Titaghur. By 1919, 131 individuals held shares in both Victoria and Titaghur, comprising a majority of the shares in each company.

Table 3.18: Convergence of ownership in 1919, 131 individuals holding shares in both Titaghur and Victoria Cos.

Mill Company	Titaghur	Victoria
Shares held	22,101	19,373
% of total	51%	62%
Average shareholding	169	148

Source: MS 86/3/2/9, Titaghur Co, Share Allotment Book, 1919-69, pp 1-23; MS 86/2/1/4 Victoria Co, pp. 194-203, 16 Oct 1919.

Conclusion

The content of the family relationships and the ownership structure discussed in this chapter have been demonstrated to possess an economic rationale. The company forms adopted were a specific way of internalising different types of competitive advantage. These included the pooling of resources and different types of information by a group of families in Dundee who were in the second tier of jute manufacturers and merchants looking for more profitable

[205] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 357, 5 Feb 1918.

[206] MS 86/2/1/4, Victoria Co, Minute of EGM, p. 169, 3 Oct 1919.

opportunities after the Dundee industry had passed its peak. Thomas Duff brought location specific knowledge of Calcutta to the firm, Barrie his knowledge of shipping and export markets, the Nicolls with their knowledge of contemporary manufacturing processes in Dundee. This structure was capable of replicating itself on an increasing scale, for example, through incorporation of Victoria. The group of companies' structure was the consequence of these evolutionary developments and once the company emerged in its mature form it was able to sustain itself using family connections and incorporating high calibre managers over time.

This chapter has focused on the internal development of the firm. The next chapter will address how the firm dealt with its external environment

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Chapter 4. Thomas Duff & Co: Control and Managing Competition.

The previous chapter considered how Thomas Duff & Co was able to capture and retain lucrative rents from its managed mill companies. The agency was able to use these rents as a powerful incentive to motivate the performance of the managerial hierarchy in Calcutta by creating a career path for effective managers to gain promotion to the Dundee board of directors and a share of the rental income. The general manager in Calcutta was allocated a portion of the shares in addition to the directors.[1] However, the model was dependent on maintaining the exclusivity of the group of insiders in the direction and ownership of the managing agency. At the same time, it was logical that there would be keen competition for a share of the spoils. In this chapter, the threats that emerged to the source of the rental income and to the exclusivity of the firm are delineated, and the firm's response analysed.

Section 4.1 considers the threat posed by challenges to the control and authority exercised by the existing directors on the board of Thomas Duff & Co, as competition emerged to access the rents the firm generated.

Section 4.2 delineates the manner in which the managing agents were able to account for the increasing importance of raw jute prices and to internalise knowledge affecting vertical relationships in the supply chain and exercise control over their suppliers while minimising risk through informal backwards integration.

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[1] The first general manager, William Smith was allocated 20 shares, or a 10 % stake, MS 86/5/1/1, Thomas Duff & Co, p. 2.

Section 4.3 then considers the aspect of horizontal relationships and the way in which the threat of volatility through competition between jute mills and their managing agents was managed through the creation of mechanisms of collusion in the form of the Indian Jute Mills Association.

4.1 Countering Threats to the Managing Agents' Control

When James Robertson, one of the firm founders, departed the directorate of the mill companies in 1888 after a dispute about his remuneration, it was reported that he was threatening to build competitor mill at Samnuggur in the local press:

> We understand an influential firm in Calcutta who own suitable building ground at Samnuggur contemplate building a large mill, and negotiations are now going on with the view to have the building commenced at an early date. We learn your townsman, Mr Robertson, late manager of the Samnuggur Jute Company, is to take a considerable interest in the mill, and is likewise to superintend the erection and afterwards undertake the management.[2]

In the event, Robertson's participation in the project did not materialise and he returned to Dundee to purchase the Logie jute works. Despite his exit from the directorate, Robertson was permitted to retain his shareholding in Thomas Duff & Co. It seems reasonable to infer that he retained a desire to see Thomas Duff & Co prosper commercially in the Indian market. Perhaps more significant threats to the objectives of the directors emerged with the cases of Moir and Scott.

Moir versus Thomas Duff & Co.

[2] "Calcutta Jute Market; from our own Correspondent", 20 Mar 1888, *Dundee Courier*, 10 Apr 1888, p. 2.

The first instance of a threat to the form of control and exclusivity exercised by the founding directors of the managing agents came from non-founding individual directors. The cases of Moir and Scott highlight this aspect.

The discussion of the Articles of Association adopted by the Samnuggur and Titaghur mill companies in Chapter 3 demonstrated how the directors ensured their continued control through the insertion of clauses giving the directors discretion to decline a share transfer to an undesirable recipient – whether through a commercial transaction, marriage or inheritance. The threat of this power invested in the directors was sufficient to achieve its intended objective and the power to reject a transfer was only invoked by the directors on one occasion throughout the whole period from 1874 to 1921, when a transfer of Samnuggur shares to John N Kyd, the Victoria Co's lawyer, was declined during the course of the two firms' legal dispute. However, in the case of Thomas Duff & Co, similar Articles of Association were adopted that were enforced in order to reproduce the exclusivity of the firm. To complicate matters, this power was not invoked consistently. When directors of the managing agency died or resigned, their shares were redistributed amongst the remaining directors in proportion to their existing shareholding.[3] However, it has been seen how some directors "inherited" their positions on the board of directors and new directors were issued with additional shares in the managing agency over time. Given the prominence of Thomas Duff's role in the formation of the firm and as its largest shareholder, the directors appear to have permitted his executors to retain 15 shares in Thomas Duff & Co, or a 7.5% stake of the total of 200 shares issued at the time.[4] When Alex Nicoll resigned as a director but remained on the board of the Victoria Co, it had been deemed strategic to allow him to retain shares in Thomas Duff & Co. However, when

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[3] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 124, 4 Oct 1893, p. 147, 17 Oct 1894; p. 200, 9 Dec 1896; MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 88, 23 Mar 1909, p. 95, 29 Jun 1909; p. 184 29 Apr 1912; MS 86/5/1/4, Thomas Duff & Co, MOTD, p. 7, 31 Mar 1921, p. 35, 13 Dec 1921..

[4] Only 65 of Thomas Duff's 80 shares were redistributed to the other directors, MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 124, 4 Oct 1893, p. 147, 17 Oct 1894; p. 200, 9 Dec 1896.

William Moir died in 1898, there was no obvious candidate from his business or family network to "inherit" his position and shareholding of 22 shares. Instead, the general manager in Calcutta, George Nairn was promoted to the boards of the managing agents and the two mill companies.[5] Moir's widow, Margaret Erskine Moir, then applied to take possession of the shares:

> Mr Moir's shares:- A letter from Messrs Shield & Kyd [...] was submitted, enclosing confirmation of Mr Moir's Estate in favour of his widow Mrs Moir, as his Executrix, and requesting the 22 shares standing in name of the late Mr Moir to be transferred to Mrs Moir as such Executrix. The board unanimously declined to register the confirmation and Mrs Moir as Executrix foresaid, and the secretary was instructed to intimate accordingly.

They also refused to pay Moir's widow the outstanding dividend on his shares, "there being no legal and registered owner entitled to require payment of and competent to give a valid receipt for the same", presumably because by doing so they would have validated her claim to be the legal owner of the shares.[6] In the legal action that followed, the judges hearing the case found in favour of Thomas Duff & Co's right to enforce the Articles of Association in relation to transfers but in favour of Moir's executors to be remunerated for Moir's outstanding dividends with interest.[7] Fearing the uncertain outcome in the event that Mrs Moir exercised her right to appeal to the House of Lords after a further two years elapsed, Thomas Duff & Co settled the case by paying the outstanding dividend with interest and an additional amount equivalent to purchasing the shares at a premium of their "market valuation". The total settlement was £6,000 or 150% of the paid up capital of the company.[8] The "market valuation" was itself a

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[5] MS 86/1/1/6, Samnuggur Co, MOTD, p. 215 25/1/99; MS 86/5/1/1, Thomas Duff & Co, Minute of AGM, p. 345.

[6] MS 86/5/1/1, Thomas Duff & Co, p. 264, 27 Dec 1898.

[7] "Question about Dundee Shares.", *Dundee Courier*, 28 Jun 1899; "Court of Session.", *Glasgow Herald*, 24 Jan 1900; "Dundee Lady's Claim to Shares.", *Dundee Courier*, 16 Jul 1900; MS 86/5/1/1, Thomas Duff & Co, p. 264, 27 Dec 1898, MS 86/5/1/2, Thomas Duff & Co, p. 32, 11 Jan 1900, p. 35, 24 Jan 1900, p. 63, 17 Jul 1900.

[8] MS 86/5/1/2, Thomas Duff & Co, p. 75, 28 Aug 1900.

fictional quantity determined by the directors themselves on an annual basis for setting the price at which new shareholders had to purchase the shares – which was set considerably below a valuation based on the actual rate of return on the shares.[9] Another factor influencing the directors' to settle the case was the desire to avoid having to disclose information in the law courts shedding light on the opaque workings of the firm that might then come to the attention of the mill shareholders through reports in the newspapers. This danger was illustrated by the fact that the directors were compelled to give Mrs Moir's legal counsel access to confidential balance sheets of the firm for the previous two years to be viewed by appointment at the company's offices.[10]

While the legal dispute was ongoing, the directors moved swiftly to insure themselves against future disputes. They hurriedly issued the remaining 60% of the shares which had not been allocated to date amongst the existing shareholders.[11] They also consulted a QC with a view to amending the Articles of Association:

> The expediency of revising the company's articles of association, in view of the extensive additions to the Acts of Parliament affecting Joint Stock Companies and also the decisions of the courts of law on points in connection with former Acts, was informally discussed with the company's solicitors some time ago.[12]

The second case of a threat to the founding directors' control to consider is that of Alex C Scott. Scott was the son of an Irish-born ironmonger and mill furnisher, Thomas Scott, and

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[9] Only £25 had been paid up on the £100 shares in 1898, with a "market valuation" of £100, or 400%, whereas returns had averaged 133% per annum over the period 1885-98. See MS 86/5/1/1, Thomas Duff & Co, Minutes of AGMs, 1885-99.

[10] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 268, 25 Jan 1899.

[11] MS 86/5/1/2, Thomas Duff & Co, p. 12, 8 Aug 1899.

[12] MS 86/5/1/2, Thomas Duff & Co, p. 277, 8 May 1901. The revised Articles of 1901 appear to have been further amended and superseded at a later date as there is no trace of them in the amended version, MS 86/V/6, Thomas Duff & Co, Memoranda and Articles of Association, 1874-1901, 1908, 1932, 1948 and 1964. The amended Article 41 of 1906 empowered the shareholders to set the "current price" of shares at the Annual General Meeting. The amended Article 51 of 1906 entitled the directors to serve a 14 days requisition notice on shares of deceased members, (subject to executors applying to transfer shares.)

served as an apprentice in his father's firm from the age of 13.[13] By 1884, Alex C Scott had set up in business on his own account at his Ward Road premises neighbouring the Nicoll brothers' mill, as a "mill and factory furnisher, tinsmith, and gasfitter."[14] Although there is no record in the minutes, it seems plausible that Scott's interest in the Thomas Duff group developed as a result of transactions to provide the firm with mill furnishing services and supplies in Calcutta. From 1884 to 1893, he incrementally increased his shareholdings in the Samnuggur and Titaghur Cos, culminating in the Chairman, Thomas Duff, transferring 200 shares to him.[15] He was also a shareholder in the Victoria Co, and was one of a handful of regular non-director attendees at Annual General Meetings of the mill companies, mostly individuals with regular contracting relationships to the firms.[16] Scott was coopted on to the board of the mill companies in October to replace William Smith after his death in July 1893 at the age of 43, who had only retired from Calcutta the previous year.[17] Scott joined the board of Thomas Duff & Co the following year, replacing Joseph Barrie after his death.[18] Circumstantial evidence of Scott's prior connection with Calcutta is provided by his appointment as an executor of William

[13] Household Census Enumerator 1861, Dundee Parish; ED 33 34; Page 40; Line 1; Roll CSSCT1861_39; "Death of Mr Thomas Scott, Police Commissioner, Newport", *Dundee Courier*, 16 Oct 1890. The diverse skills involved in servicing the jute industry are recorded in an advertisement of 1874 – "Thomas Scott, grocer's outfitter, mill and factory furnisher, and general ironmonger, tinsmith and gasfitter, blacksmith, brass finisher and japanner, 17 Union St, Dundee." Dundee Directory 1874-75, (Dundee, 1874), Advertisements, p. liii.

[14] Dundee Directory 1884-85, (Dundee, 1874), p. 296.

[15] MS 86/3/1/1, Titaghur Co, MOTD, p. 54, 5 Nov 1884; MS 86/3/1/1, Titaghur Co, MOTD, p. 98, 1 Apr 1885; MS 86/1/1/2, Samnuggur Co, MOTD, p. 46, 9 Sep 1885; MS 86/1/1/2, Samnuggur Co, MOTD, p. 112, 21 Apr 1886; MS 86/1/1/2, Samnuggur Co, MOTD, p. 220, 2 Mar 1887; MS 86/3/1/1, Titaghur Co, MOTD, p. 284, 2 Mar 1887; MS 86/1/1/2, Samnuggur Co, MOTD, p. 344, 22 Feb 1888; MS 86/1/1/2, Samnuggur Co, MOTD, p. 370, 25 Apr 1888; MS 86/1/1/2, Samnuggur Co, MOTD, p. 372, 1 May 1888; MS 86/1/1/2, Samnuggur Co, MOTD, p. 377, 16 May 1888; MS 86/1/1/2, Samnuggur Co, MOTD, p. 381, 30 May 1888; MS 86/3/1/2, Titaghur Co, MOTD, p. 234, 8 Nov 1893; MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 139, 31 Jul 1894.

[16] MS 86/2/1/2, Victoria Co, minute of AGM, p. 20, 28/2/93; MS 86/1/1, Samnuggur Co, MS 86/3/1, Titaghur Co, Minutes of AGMs 1887-93. Scott attended in 1887 and regularly from1890.

[17] MS 86/1/1/4, Samnuggur Co, MOTD, p. 252, 30 Oct 1893; "Death of Calcutta Jute Manager." *Dundee Courier*, p. 6, 8 Jul 1893.

[18] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 139, 31 Jul 1894.

Smith's will.[19] In 1894, he "mentioned that he was willing to pay a visit to India for the purpose chiefly of examining into and acquainting himself with the company's business there. The chairman [James Nicoll] stated that he was greatly pleased that Mr Scott was agreeable to do this and other members of the board concurred."[20] The statement is interesting in two respects. The inclusion of the qualifier "chiefly" hints that Scott had other business interests in India to attend to, probably in seeking mill furnishing contracts from other firms. It also draws attention to the energy and initiative that Scott brought to the ageing board in a period when its personnel was in the process of being renewed. The board had not had a Dundee-based director willing to visit Calcutta since Joseph Barrie in 1879, which became a pressing matter after Smith's retirement as general manager – cum – permanent "visiting director in Calcutta".[21] Scott made further visits to Calcutta in 1897 and in 1899.[22] His 1897 visit was in place of Charles Barrie Ovenstone, "whose turn it is"[23], suggesting that the directors recognised the need to renew their knowledge of Calcutta and intercourse with the managerial hierarchy in principle by a system of rotating visits. However, this was not carried out in practice. Other than Scott, the Secretary David Stewart's visit was the only one by a Dundee based director from 1879 to the end of the century.[24] The confidence of the other members of the board in Scott was demonstrated when, in 1899, James Nicoll was the sole remaining founder director of the firm and had served for two years as the Chairman of the companies after Thomas Duff's death when he decided to resign the position. The directors "accepted his

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[19] William Smith, Inventory SC 20/50/69 registered for probate at Cupar Sheriff Court, 20 Sep 1893, p. 931.

[20] MS 86/1/1/4, Samnuggur Co, MOTD, p. 396, 1 Aug 1894.

[21] Smith's unique position entailed a change in the Articles of Association to formalise his role as visiting director of the mill companies, MS 86/1/1/3, Samnuggur Co, Minute of AGM, p. 432, 9 Mar 1892, MS 86/3/1/2, Titaghur Co, Minute of AGM, p. 432, 9 Mar 1892.

[22] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 215, 14 Jul 1897; MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 405, 21 Jun 1899.

[23] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 215, 14 Jul 1897.

[24] MS 86/1/1/5, Samnuggur Co, p. 197, 11 Mar 1896; "Jute Manufacture in Calcutta.", *Dundee Courier*, 19 Feb 1896.

resignation with regret" but unanimously elected Scott, one of their most junior members to replace him. Scott protested modestly that "he would very much rather not be asked to occupy the chair".[25]

The period of Scott's Chairmanship coincided with a flurry of proposals sent from the general manager in Calcutta to the the Dundee board of the managing agency suggesting opportunities to invest and diversify, which it is fair to assume were made on Scott's initiative.

Such proposals had been rare up to that point. In 1883, at the time of the firm's formation, James Watson – of the Dundee distilling dynasty and a shareholder – had proposed the promotion of an investment trust in Dundee, which was not pursued.[26] William Smith's correspondence from 1887-90 during a period of slump in the jute industry also drew the attention of the directors to opportunities for new business. One proposal he presented was to take over the struggling commission agents, Mitchell, Reid & Co in order to diversify into commission business to exploit the potential economies of scope associated with the commercial side of the business.[27] Another proposal was to bid to take over the bankrupt Chunda Ramjee jute mill, which feel into the hands of Andrew Yule & Co.[28] Negotiations to take over the agency of the Manchester Fire Assurance Co were aborted in 1895 when the insurance company's representative also entered into discussion with a Calcutta rival, Jardine, Skinner & Co.[29] Thomas Duff & Co do appear to have obtained the agency for the Queen Insurance Co of America in 1898 but the listing only appeared in *Thacker's* for one year.[30] The reluctance of the board of directors in Dundee to pursue any of these proposals seriously testified to their strong sense of identity as a specialist jute manufacturer and their aversion to

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[25] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 268, 25 Jan 1899; MS 86/1/1/6, Samnuggur Co, MOTD, p. 215, 25 Jan 1899.

[26] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 6, 28 Sep 1883.

[27] MS 86/V/7/1a, Letters from William Smith, Calcutta, to Dundee, 23 Apr 1887

[28] MS 86/V/7/1a, Letters from William Smith, Craig Mount, Darjeeling, to Dundee, 3 and 19 Aug, 1890.

[29] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 156, 23 Jan 1895.

[30] Thacker's Indian Directory 1898, (Calcutta, 1898), listing in "Commerce Trade & Professions."

taking any risk that involved a shift from focusing on their core competence. There were good strategic reasons to consider taking over the Chunda Ramjee mills to prevent it falling into the hands of a competitor but this consideration seems to have been outweighed by the directors' preference to expand through investing in new plant rather than acquiring existing concerns. A minute of 1899 seemed to mark a change of policy under Scott's influence:

> Mr Nicoll reported that the opportunity of acquiring further agencies was likely to turn up, and it was agreed to authorise Mr Nicoll to undertake agencies for jute mills, coal companies, insurance and other kindred business, subject to confirmation by the board.[31]

This change was confirmed by a decision to increase the paid up capital of the managing agency "seeing that all the paid up capital of the company has been invested in land, and having in view the probable extension of the agency business of the company".[32] In the following year, a further four proposals were presented. The first was an investment in Bengal's Raniganj coalfield, which was rejected. There followed a further proposal for Thomas Duff & Co to become managing agents of another coal concern:

> Mr Nicoll reports that he had undertaken a coal agency from Kumar Dakshineswar Malia of Searsole on commission at the rate of two annas six pie per ton which is about the usual rate. Mr Nicoll reports that this coal owner is a wealthy and highly respected native and that his coalfield yields a satisfactory quality. The board approved of Mr Nicoll's action.[33]

On the same day that they approved the coal agency in their role as managing agents, meeting later in their role as mill company directors, they "placed a year's contract with Dakshineswar Malia for Jerria quality of coal at R6-7-6 per ton landed, having, after several experiments and a thorough trial, found that this quality suits best."[34] The agency appears to have been short

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[31] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 10, 1 Aug 1899.
[32] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 53, 6 Jun 1900.
[33] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 43, 6 Mar 1900.
[34] MS 86/1/1/6, Samnuggur Co, MOTD, p. 450, 6 Mar 1900.

lived as it is not mentioned again in the directors' minutes and the mill companies were contracting instead with the Bengal Coal Co by the following year.[35]

A second proposal appeared to have been to supply yarn to the US market:

> Mr Nicoll and [the company secretary] had had an interview with Mr Jacob Elysas, the President of three large bag manufacturing companies in the United States, who had called with the view of ascertaining whether a direct business could not be done to mutual advantage. After fully discussing matters with Mr Elysas, it did not seem that such could be worked to any advantage to the mills, and it was agreed to let the matter drop.[36]

Although specialist spinning firms were a staple of the Dundee trade, the evolution of the spatial geography of the Calcutta industry on the basis of relatively large scale integrated spinning and weaving plants dispersed along the river Hooghly did not lend itself to this kind of venture.[37]

The third proposal to take over the management of a jute press was rejected out of hand on economic and racial grounds. The general manager John Nicoll had been:

> […] approached by influential natives having the control of the affairs of this concern offering the agency and management of their business. This concern has had a very unsatisfactory career for some time as shown by the copy of accounts forwarded by Mr Nicoll, and there being strong objections on account of the class [sic] of the majority of the proprietary, the board were clearly of the opinion that it would be quite unsuitable to accept the agency.[38]

Finally, there was a proposal to contruct godowns at the firm's principal jute mart Naraingunge:

> […] as large quantities of fine jute have often to be stored there in cutcha sheds awaiting transport which was more or less dangerous, and in the event of destruction by fire might cause serious loss

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[35] MS 86/1/1/8, Samnuggur Co, MOTD, p. 1, 13 Aug 1901.

[36] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 45, 15 May 1900.

[37] As indicated by the categorisation of production units and firms in the listings for "Mill and Factory Managers" in the "Commercial Directory" section of the annual *Dundee Directory*.

[38] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 66, 31 Jul 1900.

> and inconvenience. The directors saw very grave objections to the company carrying out any such scheme, and were of opinion that any such accommodation should be provided by the jute merchants at the principal centres; indeed, it is understood that Messrs R Sim & Co are at present contemplating erecting large and substantial godowns.[39]

The proposal ran counter to the developing ties with the networked firm R Sim & Co considered below. Further proposals to diversify were presented by Landale, Clark & Co for coal agencies in 1903 and 1907[40], and to expand the firm's jute manufacturing capacity in 1904 through taking over the Arathoon jute mills or the Dunbar cotton mill, but received short shrift.[41]

It seems that for a time under Scott's chairmanship – influenced by the time he had spent in Calcutta and his network of contacts there – Thomas Duff & Co seriously considered transforming itself into a diversified managing agency using profits made in jute manufacturing as a springboard to enter other industries, following the model pioneered by the two other prominent newcomers who dominated the jute industry, Andrew Yule & Co and Bird & Co. However, the initiative floundered against the conservatism of his fellow directors, who appeared to be more concerned to preserve the managing agency's identity as a jute specialist focusing on its core competence in jute manufacturing, which aligned with the knowledge of its predominantly Dundonian shareholder base.

Further evidence that suggests that Scott was adept at cultivating a network of business contacts connected to India, probably through mill furnishing contracts, is provided by a minute of 1901 after his resignation:

> Heretofore the Calcutta office has been in the habit ex gratia of collecting bills sent them by Mr Scott for goods shipped by him to native dealers and attending to finance for same. The secretary stated

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[39] MS 86/1/1/7, Samnuggur Co, MOTD, p. 176, 9 Jan 1901.

[40] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 241, 18 Aug 1903, and p. 421, 30 Apr 1907.

[41] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 262, 8 Jan 1904, p. 264, 26 Jan 1904, and p. 396, 11 Oct 1904.

> that Mr MacDonald, who has recently acquired Mr Scott's mill furnishing business, had called and enquired as to whether the same facilities would be continued to him, but the board decided to instruct the Calcutta office to discontinue doing so, and in the event of any such business passing on to them to intimate from their end, both to Mr Scott and Mr MacDonald, that it should be stopped for the future.[42]

Scott also had a business relationship with the Dundee agents of Calcutta jute mills managed by the competitors of Thomas Duff & Co. These relationships are inferred from Scott being named as executor of the wills of John and George Alexander, and of John Balfour Thomson, who died in the period 1896-1902.[43] John Alexander, formerly connected with Thomas Duff at Barking, was the agent of the Mackinnon, Mackenzie's India Jute Co in Dundee from 1882 until his death in 1896.[44] George Alexander, his son, was the mill manager of the India Jute Co from 1883-1900.[45] John Balfour Thomson was the manager of the Bird & Co's Union Jute Co from 1881-97 and then Bird & Co's agent in Dundee until his suicide in 1901.[46] Another speculative piece of circumstantial evidence was an article from the Calcutta correspondent of the Courier that appeared in 1899 stating that "[i]t is rumoured here [in Calcutta] that Mr JA Kinnison [...] has found subscribers in your neighbourhood to provide funds for the erection of a jute mill of 300 looms."[47] Scott's inventory of 1918 suggests that he had a business relationship with the Kinnison mill, showing a debt outstanding to him for "commission on contracts arranged [...]

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[42] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 138. 2 Jul 1901.

[43] John Alexander, Inventory SC45/31/48 registered at Dundee Sheriff Court 7 Oct 1896, p. 695; James Balfour Thomson Inventory SC45/31/53 registered at Dundee Sheriff Court, 10 Jul 1901, p. 360; George Alexander, Inventory SC20/50/85 registered at Cupar Sheriff Court, 9 Jan 1903, pp. 17-18.

[44] The Dundee Directory listings for the period 1882-96 list a John Alexander as "agent" at addresses consistent with the 1891 Census enumerator and his inventory, ibid. The 1891 Household Census enumerator gives his occupation as "agent for the India Jute Co", Liff and Benvie Parish, ED 21, p. 4, Line 4, Roll CSSCT1891_87.

[45] Thacker's Indian Directory, 1882-1900, listings in "Commerce Trade and Professions" and "Commercial Industries".

[46] "Suicide in Dundee", Scotsman, 6 Mar 1901, p. 11.

[47] "Calcutta Jute Market. [Specially contributed to the Courier.] Calcutta, 10th August, 1899", *Dundee Courier*, 28 Aug 1899, p. 4.

for the Kinnison Jute Mills". The inventory also listed a large shareholding of 300 shares worth £20,000 in the Kinnison mill.[48]

Taking all this circumstantial evidence together, the most plausible explanation for Scott's abrupt resignation as the Chairman and a director on the boards of Thomas Duff & Co, and the Samnuggur and Titaghur Cos was that he was thwarted in an attempt to poach the firm's managing agency business in the Victoria Co through secret negotiations with its board, and possibly in the other two mill companies as well through a shareholder revolt. It is difficult to discern an alternative explanation as to why the managing agency agreements of all three mills were all abruptly renegotiated in October 1900, when the current agreements had years left to run. All the portents were favourable for Scott to undertake such a scheme. He had emerged as the dominant force of a weakened directorate with the departure of Alex Nicoll and the deaths of William Smith, Joseph Barrie, and Thomas Duff – and one that had grown out of touch with its own managerial hierarchy in Calcutta while Scott had cultivated it with the promise of a diversified agency business offering more opportunities for managers to be promoted. Scott's position as Chairman also put him in a strategic position to negotiate directly with the board of the Victoria Co and to offer them improved terms under new management. The Calcutta market was booming, with new opportunities, such as the agency business of the Kinnison mill, in the offing. Scott appeared to have accumulated significant assets of his own, as shown by his private purchase of the medium sized North Dudhope mill, which employed 500 workers[49], from David Wybrants, a Victoria Co director, in December 1900, after Thomas Duff & Co had rushed through the new agency agreements.[50] The Victoria

[48] Alexander Cochrane Scott Inventory, SC45/31/83, registered at Dundee Sheriff Court, 27 Aug 1918, p. 332, p. 335.

[49] "Sale of Dundee Mill", *Dundee Courier*, 14 Dec 1900, p. 3; "Tour of Dundee Mills. An Interesting Table.", *Dundee Courier*, 23 May 1894.

[50] See pp. __-__ above and MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 91 17 Oct 1900.

agency agreement was finally signed on 14th November.[51] In this scenario, the purchase of the Dundee mill would have marked the point at which Scott recognised that the prospects of setting up in Calcutta were no longer viable once Thomas Duff & Co had secured its agency business for the foreseeable future. It is intriguing what Wybrants' role might have been in the affair leading to Scott's resignation and exit from Thomas Duff & Co. Certainly, the remaining directors of Thomas Duff & Co were on sufficiently good terms with him to permit him to take a share in their managing agency the following year.[52] The evidence suggests that the Thomas Duff directors got wind of some scheme to which they were forced to react in June, 1900.

How was Scott's abrupt resignation reported in the firm's own records? The first indication of a division on the board of directors appeared on 12th June, 1900, when the board agreed "that copies of all telegrams received and despatched should be sent to any director who may be from home", suggesting an anxiety that a small but quorate board meeting might be called at short notice to push through measures unwelcome to other board members.[53] On 20th June, two new directors, George Nairn and John Smith, were brought on to the board of Thomas Duff & Co, having been elected to the boards of the mill companies the previous year. This was unusual, as board members were normally elected to replace a deceased director or at the time of an annual general meeting, but it may have served the purpose of obtaining a majority to oppose Scott.[54] By the 21st August, Scott had resigned as Chairman of the firms. The minutes of the meeting of the directors of Thomas Duff & Co record that Scott was absent from the meeting and that Charles Barrie Ovenstone had replaced him as Chairman and as the director overseeing the legal case with Mrs Moir.[55] The Moir case was settled by Ovenstone the

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[51] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 99, 14 Nov 1900.

[52] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 121 27 Mar 1901.

[53] MS 86/1/1/7, Samnuggur Co, MOTD, p. 49, 12 Jun 1900.

[54] MS 86/5/1/2, Thomas Duff & Co, p53, 20 Jun 1900.

[55] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 73, MOTD, 21 Aug 1900.

following week.[56] At the board meeting of the 21st, the minutes noted the board's acceptance of Scott's resignation as Chairman. The Secretary was instructed to:

> inform [Scott] that the directors took exception to the grounds stated in his letter as the reason of his resignation, the discussion of the questions affecting the company's business to which it is understood he refers having taken place at a regularly called and properly constituted meeting of the board.[57]

These questions presumably included the decision to renegotiate the managing agency contracts and it suggests that this decision was taken in his absence at a board meeting he may not have been aware of or one called at short notice. This impression is reinforced by the following week's minute, once the crisis had passed, "to resume circulating to the directors individually copies of all telegrams received and sent", the implication being that, at some point, the instruction of 12th June to circulate all telegrams had been withdrawn, enabling an orderly coup d'etat to be pushed through.[58] On 4th September, the board of Thomas Duff & Co voted to transfer Scott's shares in the managing agency to "shareholders who are taking the active management of the company's business, to equalize their shareholdings with that of the late Chairman of the company."[59]

Scott was present at the board meeting of 26 September where Charles Barrie Ovenstone and the newly appointed John Smith, retired partner of R Sim & Co, were empowered to carry through the renegotiation of the Victoria Co's managing agency contract on behalf of the board, explicitly removing him from any say in the process. The same meeting referred to the conclusion of the new 20 year agreements with Samnuggur and Titaghur:

> Mr Scott, who was present at the meeting of 17th curt [when the new agreement was discussed], now stated that he had taken independent legal advice, and, while he further stated that he

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[56] MS 86/1/1/7, Samnuggur Co, MOTD, p. 95 28 Aug 1900.
[57] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 73, MOTD, 21 Aug 1900.
[58] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 75, 28 Aug 1900.
[59] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 80, 4 Sep 1900.

> considered the agreement a very good one so far as this company was concerned, he asked his dissent to the execution of the agreement to be recorded as he was not satisfied with the course proposed to be followed for its adoption. The board took exception to his action in having on his own account taken outside legal advice on the point, as they were quite prepared, if they had felt any difficulty in the matter, to have consulted counsel in a proper and regular way, and Mr Hendry was instructed, if he thought it expedient, still to take the advice of counsel.[60]

After 14th November, Scott did not attend another board meeting of any of the companies until the 22nd February, 1901, which may suggest that he had been away in India, or had simply been marginalised. At the meetings of the Samnuggur and Titaghur Cos of 22nd February,

A proof of the directors' report was submitted to and considered by the meeting clause by clause. The same was approved of by the meeting, but Mr Scott entered his dissent against the clause referring to him under the heading "Directorate". After some discussion the Secretary was instructed to note same.[61]

The implication was that Scott was determined that the shareholders would be informed of his dissent in advance of the annual general meeting, where he might muster sufficient support to overturn the majority of the board of directors. Further meetings of the mill companies took place a few days later with Andrew Hendry, the firm's solicitor, in attendance where Scott "intimated that he was to resign office as a director at the general meeting on 6th prox., but declined to give written intimation to that effect, and in view of this it was determined to issue the notices in the form submitted to the [annual general] meeting."[62] Hendry had received written notice of Scott's resignation by the time further board meetings were called two days

[60] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 87, 26 Sep 1900.
[61] MS 86/1/1/7, Samnuggur Co, MOTD, p. 204, 22 Feb 1901.
[62] MS 86/1/1/7, Samnuggur Co, MOTD, p. 205, 25 Feb 1901.

later, leading to what was presumably an unflattering clause referring to Scott being removed from the notice of the meeting, and an amended notice sent out to the shareholders.[63]

The contentious nature of the annual general meetings of Samnuggur and Titaghur was clear from the fact that the minutes record that the directors had canvassed the proxy votes of over 100 shareholders:

> A letter of resignation as a director, of date 5th current, by Mr Alexander Cochrane Scott was submitted to the meeting. The Chairman stated that this letter had been sent to the secretary after the directors had called upon Mr Scott to resign office and after they had given him notice that if he did not do so a resolution for his removal would be submitted to this meeting. On the motion of the chairman, seconded by Mr James Nicoll, it was unanimously agreed to accept Mr Scott's resignation and resolved that he be removed from the office of director of this company, and this was done accordingly.

The directors, in their anxiety to avoid criticism, had also enlisted the support of a shareholder and local grandee. "Ex-Lord Provost Matthewson expressed his strong approval of the financial policy which the directors were pursuing in conducting the affairs of the company." The minutes recorded that the meetings approved the new managing agency agreements unanimously despite Scott himself being present, suggesting he had misjudged the loyalty of the inside shareholders' family ties to the other directors and was unable to overcome the passivity of the outside shareholders.[64]

Scott had still retained his seat on the board of the managing agents but was informed of their intention to call a special meeting to oust him. They received his resignation two days later.[65]

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[63] MS 86/1/1/7, Samnuggur Co, MOTD, p. 207, 27 Feb 1901, and p. 211, 6 Mar 1901; MS 86/3/1/6, Titaghur Co, MOTD, p. 250, 6 Mar 1901.

[64] MS 86/1/1/7, Samnuggur Co, Minute of AGM, p. 215, 6 Mar 1901; MS 86/3/1/6, Titaghur Co, Minute of AGM, 6 Mar 1901.

[65] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 118, 13 Mar 1901, and p. 120, 15 Mar 1901.

By this time, his interest in Calcutta seems to have ended as he sold the mill furnishing business around the same time as he purchased the North Dudhope works.[66]

Although there was no record of the decision to transfer Scott's shares in the managing agency[67] being reversed, later events show this must have occurred. Perhaps he was allowed to retain a shareholding in exchange for his silence about the whole affair. Certainly there was no reference to it in the newspapers at the time while the reporting of the Moir versus Thomas Duff & Co case was going on. When Smith died in 1918, "[t]he board unanimously decided not to give their consent to the registration of [his son and executor], Mr T[homas] W[illiam] Scott as a member of the company" by transferring the 43 reinstated shares and instead to "to enforce the transfer of the whole of the shares which stand in the register in the name of the late Mr Alexander Cochrane Scott to a person or persons to be nominated by the directors."[68] What followed was essentially a recapitulation of the Moir case. TW Scott's lawyers informed Thomas Duff & Co that they did not recognised the legal basis of Article 51 of the revised Articles of Association, empowering the directors to transfer the shares of a deceased member if no application was received to transfer them within 14 days of their death. Furthermore, they did not accept the directors' £300 valuation of the shares, which they valued at £500, stating that the "Estate Duty Office have declined to accept of that value", and announced their intention to sue the transferers and recipients of the shares for damages.[69] The board of Thomas Duff & Co "ultimately decided that it would not be desirable to have the details of the company's business discussed in court in a proof" and settled the case by purchasing the shares and paying the legal costs of Scott's executors.[70] A "scheme presented to avoid

[66] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 138. 2 Jul 1901.
[67] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 80, 4 Sep 1900.
[68] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 373, 27 Aug 1918; and p. 375, 3 Sep 1918.
[69] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 373, 27 Aug 1918; and p. 379, 20 Sep 1918.
[70] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 391, 10 Jan 1919; and p. 395, 28 Jan 1919.

recurrence" of such cases included the appointment of an independent auditor to value the firm's shares in future, who fixed a value of £375 per £100 share for that year.[71]

The Scott affair had a salutary effect on the complacency of the board in relation to the monitoring of the managerial hierarchy in Calcutta. A system of rotating annual Chairmanships was instituted together with the rotation of annual visits to Calcutta by a Dundee director. As well as John Smith and George Nairn, Robert Sim was brought in to strengthen the numbers of those on the three boards with recent experience of doing business in Calcutta.[72]

4.2 Networked Firms as a Method of Informal Vertical Integration – Thomas Duff & Co and R Sim & Co.

Previous chapters have underlined the importance of raw jute in the cost structure of jute manufacturing enterprise in Calcutta and the forms of vertical integration undertaken by managing agents to ensure timely access to the raw material while controlling costs. The relationships in the supply chain proved crucial to the business model of Thomas Duff & Co. Vertical integration could be formal - through the creation of purchasing networks and godown facilities in the *mofussil* – and/or informal – through closer ties with networked firms of raw jute traders and the systematic use of credit to achieve the informal subordination of jute traders down the value chain.[73] Unlike larger and more diversified managing agents such

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[71] MS 86/5/1/3, Thomas Duff & Co, MOTD, p. 393, 20 Jan 1919; and p. 399, 22 Apr 1919.

[72] MS 86/1/1/8, Samnuggur Co, Minute of AGM, p141, 5 Mar 1902; MS 86/3/1/1/7, Titaghur Co, Minute of AGM, p136, 5 Mar 1902; MS 86/5/1/1/3, Thomas Duff & Co, Minute of AGM, p166, 7 Mar 1902.

[73] See also Sugata Bose, *Agrarian Bengal: Economy, Social Structure and Politics, 1919-47* (Cambridge, 1986), Chapter 4; Sugata Bose, *Peasant Labour and Colonial Capital; Rural Bengal since 1770* (Cambridge, 1993), pp. 42-44; Goswami, *Industry, Trade and Peasant Society*; Bagchi, *The Presidency Banks and the Indian Economy*, pp. 9-10, 20-26.

as Bird[74], Thomas Duff lacked the financial resources to take on the risk of formally internalising their supply of raw jute. How did the Thomas Duff & Co group secure its raw jute supplies?

Once the group reached its mature form, the managing agents were responsible for arranging finance and for purchasing inputs of the raw material on behalf of the managed mills, in the same way that they were responsible for the marketing of their output. Initially, the managing agents' limited reach and knowledge in the jute centres was reflected by the preponderance of purchases made through brokers from intermediaries in the Calcutta bazaar.[75] By 1888, the general manager was attempting to dispense with brokers as intermediaries for bazaar purchases, at a saving that worked out to about 2%:

> Here I may mention that we intend in future to make all our own purchases from the bazaar direct. Mr Whytock has bought over 10,000 maunds since he joined us, and we are convinced, in fact we have proved it beyond doubt that direct purchases give a clear saving of _/1/_ [annas] to _/1/6 [annas] p[er] maund as against commission purchases by brokers here, and besides we get the jute we want. The bazaar staff costs us nothing, and, if we have an assistant daily in the bazaar he can often pick up lots at extremely cheap prices for cash.[76]

"Mr Smith had just returned from being round the jute districts, and the opinion [about the prospects for the jute season] above given has been formed after personal inspection."[77] Smith's visit led him to "expect the quality to fall off as the season advances."[78]

By 1894, the directors were writing "failed to see any good reason adduced why a trial should not be made of sending a man up to the districts seeing that the present is such a favourable

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[74] Harrison, *Bird and Company of Calcutta, 1864-1964*, p. 32.

[75] MS 86/1/1/1, Samnuggur Co, MOTD, p. 408, 19 Nov 1884; MS 86/1/1/2, Samnuggur Co, MOTD, p. 260, 29 Jun 1887.

[76] The 2% calculation assumes a raw jute price of 5 rupees per maund. There were 16 annas to the rupee. A maund was an Indian measure of weight equivalent to 82 lbs. MS 86/V/7/1a, Letter from General Manager William Smith, Calcutta, to Dundee, 8 May 1888.

[77] MS 86/3/1/1, Titaghur Co, MOTD, p. 445, 29 Aug 1888.

[78] MS 86/1/1/2, Samnuggur Co, MOTD, p. 408, 29 Aug 1888.

opportunity", although the general manager objected that the Calcutta office was understaffed.[79] In addition to purchases in the bazaar, Thomas Duff & Co transacted regularly with the larger jute merchants deemed to be creditworthy because of their links to European business circles. These firms had access to credit from the Presidency Banks and the Bank of Bengal which systematically discriminated against Indian traders.[80] These included the dominant trader both in the domestic market and the export market, Ralli Brothers[81], also Landale, Clark & Co, and Marcar David. David had a close trading relationship with the Barnagore mill, of which Thomas Duff was a director.[82] In 1884, he purchased 250 Samnuggur shares from Chairman, Thomas Duff, possibly indicating an attempt to cement a closer trading relationship. The hostility of Thomas Duff & Co to conducting risky trades with non-Europeans was indicated by their preference for conducting "double business" to finance jute purchases, which involved a current purchase of rupees with sterling and a corresponding purchase of sterling with rupees at a later date to eliminate exchange risk:

> It appears from the weekly statement that 90 d[ay]s acceptances have been given to Messrs TM Thaddeus & Co and Mr MJ Michael for jute purchases. The board would have preferred not to have given acceptances to firm such as these [non-Europeans] and would have preferred double business.[83]

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[79] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 143, 3 Oct 1894.

[80] Bagchi theorised a particular usage of the concept of 'probabilistic discrimination' in *The Political Economy of Underdevelopment* (Cambridge, 1982), pp. 189-90, and to the specific historical context of credit in the jute trade in Bengal in Bagchi, *The Evolution of the State Bank of India, vol. II,* Chapters 3 and 9.

[81] A telegram of 1896 authorised Calcutta to "buy at your discretion 10,000 bales Ralli Brothers [of the jute mark] [BR] not exceeding Rs18.", MS 86/2/1/1, Victoria Co, MOTD, p. 156, 14 Jul 1896.

[82] An obituary states that David pioneered the use of Chittagong as a port for exporting jute to Dundee, with his firm baling 20% of the jute detsined for Dundee. He "was taken up by the well-known firm of George Henderson & Co"; "Death of a well known jute merchant", *Dundee Courier*, 21 Oct 1893, p. 4. *Thacker's Directory*, 1883-97, listed Henderson & Co acting as David's agents in Calcutta, while the listings for Naraingunge and Serajgunge jute merchants showed a reciprocal connection. A director of Hendersons and of the Barnagore mill, William Lindsay Alexander, acted as the executor of David's will.

[83] MS 86/1/1/7, Samnuggur Co, MOTD, p. 9, 28 Mar 1900.

An alternative method of jute finance to issuing trade acceptances, when the European money market was tight, was to trade in Marwari hundis. These were short term loans of 3 months' duration organised by networks of traders of Gujarati origin who had evolved a highly developed parallel banking system to the European one and frequently offered lower interest rates.[84] The racial prejudice expressed towards firms like the Armenians Thaddeus and Michael, had an economic rationale in recognising the institutionalised discrimination in the banking system that affected their creditworthiness. The prejudice against the Marwaris lacked the same rationale and was gradually overcome until dealing in Hundis became a routine method of raising short-term finance for jute purchases.[85]

The preceding discussion indicates that Thomas Duff & Co purchased raw jute from a diverse group of suppliers. They lacked the capacity to create their own jute trading operation, which might in any case not be cost effective given the highly seasonal nature of the trade. Relationships with firms such as Ralli were problematic given an asymmetry in market power which was not in favour of Thomas Duff & Co. While a relationship existed with Marcar David & Co, it lacked sufficient exclusivity given the Barnagore's prior relationship. What was required was a smaller networked firm with which to transact regularly on a mutually non-exclusive but sufficiently close basis to develop privileged access to a large portion of their jute supplies while also cementing trust over time to permit the transmission of market information about the condition of the jute market in the mofussil. This was the basis on which the relationship with R Sim & Co developed.

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[84] See Bagchi, *The Evolution of the State Bank of India, vol. II,* pp. 141-5; Thomas A. Timberg, "Three Types of the Marwari Firm" *Indian Economic & Social History Review,* January 1973 10:1, pp. 9-11.

[85] Contrast MS 86/1/1/8, Samnuggur Co, MOTD, p. 90 31 Dec 1901, when the directors objected to the use of 'hundis" while indicating that they did not understand the meaning of the term, with a purchase of Rs300,000, (or £15,000), MS 86/3/1/10, Titaghur Co, MOTD, p. 54, 20 November 1906.

Robert Sim & Co was formed in 1880 by Robert Sim and John Smith.[86] By 1907, it was described by one Bengali newspaper correspondent as one of the "'leading jute firms" along with Rallis, David, Landale Clark, Jardine, Skinner and Bird & Co.[87] Smith was the younger brother of William Smith, the general manager of Thomas Duff & Co, who had gone out to India in 1876.[88] Sim almost certainly knew the Smiths from employment in the firm of Cox Bros in Dundee. The 1871 household census enumerators records that the Smith brothers were employed as "clerks" and Sim as "mill overseer jute" resident in Lochee.[89] It is known that the Smiths were employed at Coxes' and Sim's Lochee residence in the neighbourhood of the Coxes' Camperdown Works in 1871, combined with his subsequent employment in Calcutta as the manager of Coxes' Camperdown Pressing Co suggest that Sim sent for John Smith to join him in partnership in Calcutta, having learnt the jute business there working at the jute pressing and baling concern.[90] The first reference to the young firm in the records of the Thomas Duff group was a hostile one, which suggests that the general manager William Smith had abused his position to give special favours to his brother's firm without the knowledge of the directors in Dundee:

> Mr Alexander Nicoll laid on the table a private letter he had received from the general manager stating that he had accepted Bills to Messrs R Sim & Co. as an accommodation to them to the extent of Rs 75,000 in connection with their private business. The directors unanimously disapproved of Mr

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[86] Robert Sim was listed in Thacker's Indian Directory as an employee of Cox Bros from 1873 until 1879. John Smith's obituary records that "[i]n 1880, he accepted an appointment in India in the jute business.", "Dundee Merchant Dead. Mr John Smith, Adderley.", *Dundee Advertiser*, 12 Feb 1909. The first reference to transactions with R Sim & Co by the Thomas Duff & Co group is in 1883, MS 86/1/1/1, Samnuggur Co, MOTD, p. 292, 13 Dec 1883.

[87] "Jute and the Indian Riots. What will happen?" *Dundee Courier*, 3 Jun 1907, p. 3.

[88] The fraternal relationship is confirmed in the inventory of their mother Betsy Smith, where they were named as executors, inventory SC 45/31/44 registered at Dundee Sheriff Court, 4 Nov 1892, pp. 1027-8.

[89] ,"Death of Calcutta Jute Manager", *Dundee Courier*, 8 Jul 1893, "Dundee Merchant Dead. Mr John Smith, Adderley.", *Dundee Advertiser*, 12 Feb 1909; William and John Smith, 1871 Scotland Census household enumerator, Liff, Benvie and lnvergowrie Parish; ED 5, p. 53; Line 21, Roll CSSCT1871_54; Robert Sim, 1871 Scotland Census household enumerator, Liff, Benvie and lnvergowrie Parish; ED 9, p. 2; Line 19, Roll CSSCT1871_54.

[90] *Thacker's Indian Directory*, 1873-79.

> Smith's action in so doing – it being ultra vires of the Company's Articles of Association, and outwith the power of attorney in Mr Smith's favour, and otherwise inexpedient in their opinion; and the Secretary was instructed to inform Mr Smith accordingly.[91]

However, the advantages of the personal tie to a firm which had set up in the rapidly growing jute market at Naraingunge must have been obvious to the directors and their attitude had softened by 1886, agreeing **"**to allow the managing agents to give Messrs R Sim & Co temporary accommodation to the extent of five thousand rupees if it should be applied for."[92] By 1889, R Sim & Co had begun to establish itself as part of the informal Thomas Duff & Co network. Alex Nicoll transferred 25 shares of the Samnuggur Co to each of Robert Sim and John Smith and Thomas Duff 100 each of the Titaghur.[93] Both partners steadily accumulated very large shareholdings until their respective appointments as directors in 1899 and 1902.[94] The most significant step to cementing the informal tie was the decision to grant John Smith 16 allotted shares in Thomas Duff & Co, admitting him into the directors' inner circle.[95]

In that same year, the minutes refer to Alex Nicoll's nephew Patrick Whytock "having, at his own request, been relieved of his appointment [as a commercial assistant in Thomas Duff & Co's Calcutta office] in order to join Messrs R Sim & Co".[96] As Table 4.1 below indicates, from this point on, Thomas Duff & Co seems to have become the sole avenue for R Sim & Co to recruit its assistants and were effectively acting as their Dundee agents.[97] This served as a mutually beneficial arrangement by cementing ties between the two firms based on tacit

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[91] MS 86/1/1/1, Samnuggur Co, MOTD, p. 292, 13 Dec 1883.

[92] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 23 6, Jan 1886.

[93] MS 86/1/1/3, Samnuggur Co, p. 5 6/2/89; MS 86/3/1/2, Titaghur Co, MOTD, p. 119, 8 Oct 1889.

[94] Share issues recorded John Smith as holding 600 Samnuggur shares (1901 issue), and 506 Titaghur shares (1897 issue) near the time of his appointment, and Robert Sim 300 Samnuggur shares (1901 issue), and 467 Titaghur shares (1897 issue), MS 86/1/1/7, Samnuggur Co, MOTD, pp. 242-9, 13 Mar 1901, MS 86/3/1/4, Titaghur Co, MOTD, pp. 416-21, 19 May 1897.

[95] MS 86/5/1/1, Thomas Duff & Co, MOTD, p. 64 10 Jul 1889.

[96] MS 86/5/1/1, Thomas Duff & Co, p. 64, 10 Jul 1889.

[97] This is further indicated by their accommodation of R Sim & Co's request "to open a home account for Mr Alexander Nicoll of Naraingunge, to bear interest at 5%", a son of Alex Nicoll working as their commercial assistant, MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 32, 11 Jan 1900.

knowledge of each other's business. It provided R Sim & Co with a cost effective method of recruiting assistants who had attained the requisite skill, having been trained in the business of their biggest trading partner. It also served as a safety valve for Thomas Duff & Co to dispense with the services of assistants who lacked the patience or ability to wait for promotion through the firm's internal hierarchy, including some of the directors' own sons and nephews, (Table 4.1 also includes information for the Nicoll directors' sons employed by other intermediaries in the Calcutta jute trade.)

Table 4.1: R Sim & Co managers, 1883-1921, and links to Thomas Duff & Co through family ties, past employment and shareholdings.

TD = Thomas Duff & Co, S = Samnuggur Co, T = Titaghur Co, V = Victoria Co

Name	Relation of TD director	Shares held in TD cos	Previous job with TD firm	Years and initial location employed by R Sim & Co	Estate (1870 prices)
Robert Sim		S, T, V		Naraingunge 1883-1901	£92,716
John Smith	William Smith	S, T, V		Naraingunge 1891-1901	£145,909
Patrick Whytock	Alex Nicoll	S, T	TD 1884-89	Serajgunge 1889-90	£2,834
Charles W Low		T		Serajgunge 1897	£8,660
Alex Nicoll Jr	Alex Nicoll	T, V		Naraingunge 1897-04	
William D Shaw		T, V		Calcutta 1901	
Arthur W Baxter		S, T	TD 1897	Calcutta 1901-1921	£6,002
Earle D Nicoll	James Nicoll	T, V	S 1904-07	1907-09	
Leonard D Nicoll	James Nicoll	S, T, V		Chandpur 1908-1921	
David B Stewart	David Stewart		S 1905-	Chandpur c1908	
George K Stein			T 1897	1914	£1,385
James WR Steven			T 1913-21	1921	
Employed by other Calcutta jute firms					
Fred J Nicoll	James Nicoll	T	S 1895	David & Co, Calcutta 1897	£1,771
Herbert W Nicoll	James Nicoll	S		Poppe Delius 1898-1902	
Thomas Nicoll	Alex Nicoll	S		King Bros Calcutta 1901-21	

Sources: Details of employment with Thomas Duff group from MS 86/1/1, Samnuggur Co, MOTD, MS 86/3/1, Titaghur Co, MOTD, MS 86/5/1, Thomas Duff & Co, MOTD; details of employment with R Sim & Co from *Thacker's Directory*, *Dundee Courier* obituaries; shareholdings from Thomas Duff & Co shareholder lists (sources listed in Table 5.1 below) or from inventories, National Archive of Scotland; relationships to Thomas Duff & Co directors from cross-referencing censuses 1841-1911, household enumerators, with *Dundee Directory*.

Table 4.1 demonstrates the density of informal ties between the two firms. While R Sim & Co remained nominally independent, their shareholdings in the Thomas Duff & Co mills gave them an economic incentive to be accommodating to the needs of one of their most substantial customers. The final step marking the integration of R Sim & Co into the Thomas Duff & Co firm network was the election in 1899 and 1902 respectively of the firm's partners to the directorates of the Thomas Duff group in Dundee on their retirement from India. In 1901, Sim and Smith appointed Alex Nicoll Jr to oversee the affairs of the firm in the *mofussil* and in Calcutta in preparation for their retirement to Dundee.[98] It is very noticeable that the wealth of the managers who succeeded Sim and Smith was an order of magnitude smaller, as indicated by the size of the moveable estate they left after their deaths, given in the final column of Table 4.1. This suggests indirectly the subordination of the firm within the Thomas Duff group. The relative wealth of Sim and Smith cannot be explained solely by the remuneration they received after becoming directors of Thomas Duff & Co – they had already acquired large shareholdings in the mill companies at the time they joined the board.[99] Effectively, Thomas Duff & Co was able to capture the rents previously accrued by R Sim & Co due to their strategic position in the value chain. This hypothesis is supported by the fact that the timing of Sim and Smith's retiring from India coincided with Thomas Duff & Co granting increasing financial facilities to R Sim & Co.

The deepening of ties with R Sim & Co at Naraingunge did not entail any loss of independence in forming judgements of the likely course of jute markets as indicated by William Smith writing on the jute forecast for the 1890-91 season:

> I wired you to discredit those reports of Sim regarding the damage done to the crop. They take an absurdly exaggerated view of the position, as really all their opinions are influenced by what they see locally at Naraingunge and Chandpur, [and] we in Calcutta are in a much better position than they

[98] "An Indian Jute Firm's Affairs", *Dundee Courier*, 18 Feb 1901, p. 2.

[99] Smith's obituary refers to him "amassing a considerable fortune" in India, "Dundee Merchant Dead. Mr John Smith, Adderley.", *Dundee Advertiser*, 12 Feb 1909.

> are to advise you in respect to jute generally. [...] I still hold the outturn will be two annas over last year & at the end of the season (bar further accident), that this estimate will be very near correct.[100]

A message of 1896 indicates that R Sim & Co did serve as a regular source of market intelligence:

> A message was received from R Sim & Co., Naraingunge, on 7th inst. in which they say that prospects are rather worse since their last advices, and that they think the outturn will be 3 to 4 annas less than last year.[101]

The sharing of market information was a reciprocal relationship between the two firms, demonstrating an unusual level of trust given Thomas Duff & Co's assiduous protection of commercial secrecy. In 1906, "a copy of the [confidential Calcutta] market report [of the Indian Jute Mills Association] had been seen in the hands of a local jute merchant [in Dundee], and the directors individually stated that none of them had given a copy of the reports received by them to anyone."[102]:

> With further reference to this matter, the board decided that the weekly lithographed market reports should be posted only to the directors of this company, and that the analysis of the monthly working and the sale chart should be sent to the office together with two copies of the litho report. It was mentioned that possibly Messrs Landale & Clark and Messrs R Sim & Co have been in the habit of receiving a copy of the weekly report, and it was agreed to continue giving them these reports if they have lately been getting them, but to stop the posting of these to all other private individuals, and to request Messrs Landale & Clark and Messrs R Sim & Co Ltd, if they get the reports, to hold them as private.[103]

One of the advantages of the close trading relationship with R Sim & Co lay in the fact that one of the determinants of efficient working and cost control lay in purchasing different grades of

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[100] MS 86/V/7/1a, Letter from William Smith, Calcutta, to Dundee, "semi-official", 19 Aug 1890. "2 annas" was a vernacular expression for the fraction 2/16ths or 12.5%.

[101] MS 86/1/1/5, Samnuggur Co, p. 280, 9 Sep 1896.

[102] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 386, 2 Oct 1906.

[103] MS 86/5/1/2, Thomas Duff & Co, MOTD, p. 388, 16 Oct 1906.

jute to be combined in certain proportions achieve the right balance between quality and cost in the spinning of yarn. This led all the major jute traders to develop their own "assortments" of different grades for sale to the jute mills, obviating the need for mills to make a separate transaction for each grade of jute. As the biggest purchaser of Sim's assortment, this mark would have been tailored to meet the specific needs of the mills managed by Thomas Duff & Co.[104]

Another aspect that affected the calculation involved in the relationship with R Sim & Co was the increasing scarcity of godown storage space for raw jute from the turn of the century. As the construction of new mills and the extension of existing mills boomed, it put a premium on using space in mill compounds for spinning and weaving, while the increasing size of the crop entering Calcutta from September to January led many mills to compete to hire rented godown space from Indian proprietors within the bounds of the city of Calcutta at inflated prices.[105] The situation was compounded by increased government regulation of godown owners in the city to reduce the risk of fire to surrounding residences.[106] This led John Nicoll to propose to construct godowns for the Samnuggur mill at Naraingunge, but the Dundee directors preferred to contract for the service with R Sim & Co:

> as large quantities of fine jute have often to be stored there [at Naraingunge] in cutcha sheds awaiting transport which was more or less dangerous, and in the event of destruction by fire might cause serious loss and inconvenience. The directors saw very grave objections to the company carrying out any such scheme, and were of opinion that any such accommodation should be

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[104] For instance, large purchases of "R Sim & Co Assortment" were made during the 1897-98 jute season by both Samnuggur and Titaghur mills, MS 86/1/1/6, Samnuggur Co, MOTD, p. 19, 15 Dec 1897, and preceding minutes.

[105] UGD 91/11/2/3/2-3, Finlay, Muir & Co, Memoranda from Robert Williamson, the retiring commercial manager of the Calcutta branch to his replacement, Allan Arthur.

[106] IJMA, *Report of the Comittee*, 1905 (Calcutta, 1906), p. 2, 45.

> provided by the jute merchants at the principal centres; indeed, it is understood that Messrs R Sim & Co are at present contemplating erecting large and substantial godowns.[107]

Fire destroyed R Sim & Co's Mundamalla godowns at Naraingunge the following year, where the Samnuggur mill had 25,000 maunds of jute stored at the time. Although R Sim & Co's fire insurance covered the cost of the jute, this caused disruption in arranging alternative supplies at the height of the season when prices were rising.[108] It is fair to assume from the way in which orders of R Sim & Co jute were combined by the three mill companies that the figure for the weight of Samnuggur's jute destroyed in the fire is representative of the amount of jute held by the Titaghur and Victoria mills as well.[109] This would mean that well over half of the 150,000 maunds of jute lost by R Sim & Co in the fire had been purchased by the Thomas Duff & Co mills, indicating the strength of the relationship between the firms.[110] The godowns were reconstructed and the arrangement continued:

> In a special report from [visiting Dundee director] Mr Nairn, he advises that he had visited Naraingunge and made a very careful inspection of the jute belonging to the company stored there with Messrs R Sim & Co ltd. He states that he had found the quality excellent and better than he anticipated.[111]

The financial facilities afforded to R Sim & Co by Thomas Duff & Co increased rapidly from 1901 until it reached the very large sum of Rs26,00,000 in 1921, slightly more than 10% of the Rs220,00,000 spent on jute purchases by the three mill companies in that year.[112] Credit extended to R Sim & Co took the form of a mixture of loans and trade acceptances –

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[107] MS 86/1/1/7, Samnuggur Co, MOTD, p. 176, 9 Jan 1901.

[108] MS 86/1/1/8, Samnuggur Co, MOTD, p. 332, 11 Nov 1902.

[109] Compare raw jute orders in MS 86/1/1/6, Samnuggur Co, MOTD, 15 Dec 97, p. 19 and in MS 86/3/1/5, Titaghur Co, MOTD, 15 Dec 1897, p. 39.

[110] It is stated that 150,000 maunds were lost, "Great Jute Fire in Calcutta [sic]. Works totally destroyed." *Dundee Courier*, 11 Nov 1902, p. 2.

[111] MS 86/1/1/10, Samnuggur Co, MOTD, p. 295, 6 Feb 1906.

[112] MS 86/5/1/4, Thomas Duff & Co, MOTD, 20 Sep 1921, p. 30.

permitting them to raise bank finance to make purchases. 6 months acceptances became the most typical form of credit. The increasing maturity length of the acceptances over time is another indication of trust.

Table 4.2: Increasing Financial Accommodation by Thomas Duff & Co to R Sim & Co for Jute Purchase, ("acceptances" = A/ "temporary cash loan" = L).

Month, year	**Type**	**Amount,** Rupees *	**Maturity - duration**	**Interest paid by TDC**	**Interest charged to RS**
Sep, 1897	a	150,000	90 days		
Jan, 1899	a		90 days	6-7%	
Dec, 1900	a	200,000		4.7%	
Jul, 1903	a	150,000			
Aug, 1904	l	150,000			4%
May, 1905	a	150,000	6 months		
Aug, 1905	a	+225,000			
Apr, 1911	a/l	800,000			
Aug, 1911	l	300,000	60 days		4%
Sep, 1911	a/l	*800,000	6 months		
Jun, 1912	a/l	1,000,000	6 months		
May, 1913	a/l	600,000			
Aug, 1916	a/l	900,000			
Sep, 1916	a/l	1,100,000			
Sep, 1918	a/l	1,400,000			
Jun, 1919	a/l	1,500,000			
1920	a/l	2,100,000			
Sep, 1921	a/l	2,600,000			

*"limit only to be exceeded with reference to Dundee directors [of Thomas Duff & Co]" from 1911 onwards. + minimum. Sources: MS 86/5/1/1-2, Thomas Duff & Co, MOTD, 1897-1921.

Informal ties based on joint shareholding, family ties and repeated transactions to establish trust proved a viable alternative to taking on the risk of formal backwards integration.

4.3 Regulating competition: Thomas Duff's strategy in the Indian Jute Mills Association, 1884-1921.

The Indian Jute Manufacturers Association[113] came into existence after three years of the most severe crisis yet faced by the nascent industry in the form of an agreement to work short time. The working time was limited to four days a week, a reduction of a third from a normal working week of six days. By the end of the period, the IJMA was acknowledged as the most powerful industry lobby in Calcutta, and a key constituent of the Bengal Chamber of Commerce ranking alongside the Indian Tea Association and Indian Mining Association, with whose members there was a considerable overlap. The IJMA returned two dedicated representatives to the Bengal Legislative Council after the Montagu-Chelmsford reforms of 1919 with the passage of the Government of India Act.[114]

This section, gives an overview of the functions of the IJMA, before considering arguments within the existing historiographical literature as to the efficacy of the IJMA. It proceeds to analyse the functioning of the IJMA from the point of view of perhaps its most enthusiastic advocate, Thomas Duff & Co. This approach draws out some of the tensions and disagreements between IJMA constituents and also between IJMA members and non-associated mills. Drawing on the analysis of managing agencies from the previous chapter, which emphasized the heuristic importance of imperfect markets in the context of a specific form of colonial political economy, it is argued that analyses of the IJMA that focus on the irrational economic behaviour and decisions of its constituents in terms of mainstream economic theory obscure more than they explain. I will demonstrate that Thomas Duff & Co had good reason to advocate for the authority of the IJMA and that this had beneficial outcomes for them. This claim is then evaluated against the claims of other constituencies

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[113] Renamed the Indian Jute Mills Association in July, 1902, http://www.ijma.org/

[114] Misra, *Business, Race and Politics*, pp. 163-4.

interested in the industry and in terms of the industry's long term evolution in competition with the UK and other centres of jute manufacturing industry.

Overview of the IJMA, 1884-1921

The IJMA was formally constituted in 1885 with the agreement that was subsequently implemented to work four days weekly from 15th February, 1886. Short time working agreements were renewed an annual basis for the next five years before the breakup of the agreement in 1891 as the world economy started to move uncertainly out of the Long Depression led to improved demand conditions. Short time agreements were briefly renewed for three months in 1894 and again for six months in 1899. Further agreements were instituted in 1906, 1908-12, 1914, and 1917-21, which became more complex in having to account for regulating the use of electric light and government regulation of working hours in the India Factory Act which came into effect in 1912.

The regulation of working hours in order to manage the expansion of output in line with world demand and thus to maintain profitable output prices was the central element of IJMA strategy. This was buttressed by a number of subsidiary agreements. The regulation of working time logically entailed a ban on members extending their productive capacity for the duration of agreements in the pursuit of the objective of managing the growth of the industry's output. Another element of the IJMA's goal of securing profitable working was to differentiate between export markets where India manufacturers had an unassailable competitive advantage relative to Dundee, other established markets dominated by Dundee, such as the New York hessian market, and emerging markets such as Argentina, which the IJMA wished to break into. This objective was pursued through the use of a differential pricing mechanism, whereby members sold to "closed ports" at minimum prices according to an agreed price list and to open ports at market rates. The price list dropped into disuse after 1901[115] but agreed minimum prices remained in place for certain key product lines such as hessian wheat bags for the San Francisco market. The Association also played an important coordinating function in the negotiation of fixed prices for orders by Allied governments during the First World War that comprised something like a third of total industry output during this period.

Other mechanisms were employed on a more occasional basis by the Association. During the initial period of short time from 1886, a concerted attempt was made to standardise wages across the industry in order to address the negative consequences of competition for labour between mills that would potentially be aggravated by the impact of shorter working hours on weekly take home pay. Mills also coordinated their activity in order to erode the wage differential that had emerged in preceding years of weavers relative to other less well remunerated sections of the workforce. One mechanism that was agreed between the mills to facilitate this process of wage standardization was a dispensation for mills affected by strike action by workers seeking to contest lower wages to make up time lost to strikes under the supervision of the Association. Permission was also granted on occasion for making up time lost due to engine breakdowns.[116] Another mechanism occasionally resorted to was the impounding of sacking looms to address recurrent crises of profitability affecting sacking product lines relative to hessians, which enjoyed more buoyant demand and a faster growing market.

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[115] It receives nof further attention in the Thomas Duff & Co directors' minutes after that time. The last reference to it refers to the break up of the agreement on prices: "most of the mills were seling at their own discretion irrespective of the price list altogether, and that a large amount of business was passing at prices much under paper rates and evidently to some extent with the tacit sanction of the Committee of the Association." MS 86/1/1/8, Samnuggur Co, MOTD, 9 Oct 1901, p. 32.

[116] "Calcutta Jute Market; from our own Correspondent, 15 Nov 1887", *Dundee Courier*, 6 Dec 1887, p. 4. "Calcutta Jute Market; from our own Correspondent, 20 Dec 1887", *Dundee Courier*, 10 Jan 1888, p. 4.

Information function – market prices and jute forecasts.

One function typical of all employers' federations is the necessity to represent the general interests of the industry apropos suppliers of raw materials and purchasers of finished goods, while lobbying political actors to influence the legal framework in which the industry operates. In the case of the IJMA, this involved representing the interests of the mills by negotiating the contracting arrangements for the purchasing of raw jute and the sale of finished goods by seeking the most advantageous framing of contract forms, and negotiating rates of commissions and rules governing the conduct of the plethora of Calcutta brokers who served as intermediaries in contracting for raw jute and manufactured output. Coordination between the mills through the IJMA vis-à-vis brokers permitted the mills to take advantage of the asymmetry in market power in terms of their size and financial resources to gain advantageous terms from brokers. Such asymmetries also applied to many raw jute dealers, especially Indians, but in the case of the dominant actor operating in the raw jute sector, Ralli, they had to negotiate on equal terms. Ralli was also a significant shipper of manufactured goods and the mills had to negotiate with firms of similar stature who acted as large shippers or purchasers of manufactures in Australian and American markets. Regulating relations with such large contractors involved devising effective contracting arrangements, particularly with regard to disputes over quality, and negotiating effective arbitration mechanisms overseen by third parties such as the Bengal Chamber of Commerce. The Calcutta mills were at pains to minimize disputes over quality in order to combat Dundee's reputation for finer quality output which permitted Dundee to charge higher prices and exclude Calcutta from established markets.

It should be noted that discussion of short time working has tended to focus on its efficacy at regulating the supply of manufactures in line with the demand and maintaining profitable prices. Perhaps of equal importance, was its function in regulating the growth of demand for raw jute in relation to the capacity of the Bengali ryot to increase supply to meet this demand. Chapter 1 demonstrated the trend for rising raw jute prices coupled with the perception of deteriorating quality. The crisis that led to the negotiation of the first short time agreement was not only caused by weak demand for manufactures. It had as much to do with the unexpected rise in raw jute prices which eroded profit margins and disrupted the accumulation of jute stocks, leading mills to close for lack of raw material. In addition to working short time, the IJMA sought to combat rising raw jute prices by negotiating agreements to delay the timing of mills' entry into the market at the beginning of the jute season to undercut the drift to higher prices from season to season.

In order to avoid crises in the raw jute market, the IJMA assumed an important function as a source of information to its members. This involved disseminating information with respect to initial and final forecasts of the jute crop by the Government of India in May and July of each year, collated from the District Reports of ICS officials. This permitted the member mills to make more informed judgements about the likely course of prices in the coming season. This was supplemented by the regular publication in the IJMA's annual reports of estimates of the carry over of raw jute from the previous season, and of the previous year's sales of raw jute to Calcutta, Dundee and other jute manufacturing centres, together with the sales and prices of manufactures to different markets and the share of different shippers.

The Association also acted to assert the growing economic power of the jute mills in seeking to influence policy making by the Government of India and the Secretary of State in London. Reciprocally, the Government of India became more interested in the industry as it came to occupy an increasingly important place in the Bengali economy as the source of demand for the most important cash crop of the Bengali peasantry and as the main source of employment for the emerging Calcutta working class. Both groups were subject to the influence of different strands of Indian political agency responding to the impact of colonialism and seeking to challenge it, such as Swadeshi, communalism, Khilafat and non-cooperation, which the Government of India were concerned to combat. The interface between the IJMA and the Government of India, as discussed by Gordon Stewart, involved articulating a response to accusations emanating from Dundee that more liberal labour legislation governing the working hours of Bengali labour gave Calcutta an unfair competitive advantage in export markets while being detrimental to the workforce. Thus, the IJMA sought to coordinate between its members and government to eliminate Saturday afternoon working and to prevent the use of electric lighting for the purpose of mills working an additional nightshift. The IJMA also represented the interests of the industry to influence the legislation contained in the Indian Factory Commission of 1908 and to delay the implementation of a maximum working day of 12 hours for an individual male worker until 1912.[117]

[117] East India Factory Labour Commission, *Report, Vol. I*, (London, 1908); IJMA, Report of the Committee, 1909, pp. 1-4; IJMA, Report of the Committee, 1910, pp. vii-viii.

Table 4.3: IJMA Short Time agreements and actual working time of Samnuggur mill, 1885-1921.

Year	Annual working days	Daily Working Hours	Annual working hours	Weekly days during short time	Duration (unless stated all figures are hours per week; percentages given where not all mills working same hours).
1886	216	12	2592	4	1 year to 15 Feb 1887
1887	243	12	2916	4.5	1 year to 15 Feb 1888
1888	270	12	3240	5	1 year to 15 Feb 1889
1889	270	12	3240	5	1 year to 15 Feb 1890
1890	243	12	2916	4.5	1 year to 15 Feb 1891
1891	270	12	3240		
1892	270	12	3240		
1893	270	12	3240		
1894	297	12	3564	5	1 Apr-1 Jul
1895	305	12	3664		
1896	305	14	4280		
1897	305	14	4280		
1898	305	13.9	4248		
1899	307	14.0	4304	5	1 Apr-1 Oct (aborted 31 May)
1900	304	13.9	4210		
1901	304	13.5	4104		
1902	305	14.3	4340		
1903	305	14.1	4301		
1904	307	14.2	4357		
1905	306	14.5	4436		
1906	307	13.4	4098	6	Jan-June no electric light
1907	307	14.4	4426		
1908	269	15	3764	5	Jan-Jun 5 days, Jul-Dec 5 days of 15 hrs
1909	270	15	3785	5	Jan-Sep 5 days of 15 hrs
1910	288	15	4031	5	Sept-Dec 5 days of 15 hrs
1911	240	15	3592	5, 4	Jan-Sep 75 hrs pw, Oct-Dec 80% 60 hrs, 20% 75 hrs
1912	281	14.3	3980	5	Jan-Jun 80% 75 hrs, 20% 90 hrs, Jul-Dec 81 hrs.
1913	307	13.5	4138		81 hrs pw
1914	282	13.5	3800	5	Jan-Mar 81 hrs, Apr-Sep 67.5 hrs, Oct-Dec 81 hrs
1915	308	13.5	4158		81 hrs pw
1916	307	13.5	4144		81 hrs pw
1917	270	13.5	3645	5	Jan-Mar 81 hrs pw, Apr-Dec 67.5 hrs.
1918	293	13.5	3949	5	18 Jan-9 Nov 81 hrs, 25 Nov-31 Dec 54 hrs
1919	219	13.5	2956	4, 5, 4	1 Jan-31 Mar 67.5 hrs, Apr-Dec 54 hrs
1920	295	13.5	3982	5	Jan-Mar 67.5 hrs, Apr-Dec 81 hrs
1921	216	13.5	2916	5, 4	Jan-Mar 67.5 hrs, Apr-Dec 54 hrs
Average	**282**	**13.4**	**3780**		

Sources: details of IJMA agreements and annual working days to 1899 from Samnuggur Co, MOTD, MS 86/1/1/1-18 passim, and MS 86/1/1/30, p166, Index of Working Hours; details of annual working days from 1900 and of daily and annual working hours from 1911 from Thomas Duff & Co, MS 86/5/13/9, Old plant and machinery book 1900-66, "Working Hours"; details of daily working hours 1898-1907 from *East India Factory Labour Commission, 1908, vol II; Evidence* (London, 1909), evidence of Alex Wighton, Thomas Duff & Co, p244.

The Historiographical Inefficacy of the IJMA

The existing historical literature examining the role of the IJMA has tended to focus on the inter-war period. Profound structural changes that occurred in the economy from the First World War led to pressure on the Government of India to adopt a more interventionist industrial policy in response to the critique of Indian Nationalists calling for policies that would curb the power of the British managing agents and benefit indigenous capitalists, coupled with calls for trade and monetary policies that would redress imbalances between the periphery and the metropole. These calls were given added urgency by the devastating impact of the Great Depression on the terms of trade.

While Bagchi's account of Indian industrialization from 1900 had argued the power British managing agents invested in the jute industry derived from their colonial monopoly of large scale enterprise in Calcutta[118], subsequent work has challenged its applicability. Gupta's study of the breakdown of the IJMA's oligopolistic agreements in the 1930s instead emphasized the strains on the Association created by its attempts to manufacture a sub-optimal market equilibrium, which created perverse incentives to cheat without the credible threat of punishment, particularly to newcomer mills started by Indians who needed to secure a return on recent investment.[119] In a similar vein, Gordon Stewart has read back this mode of analysis into the earlier history of the IJMA in the late nineteenth century, citing evidence of cheating from its inception.[120]

Table 4.4 shows the representation of the managing agents as Chairmen of the IJMA from its inception to 1921, and the Presidents of the Bengal Chamber of Commerce for the same period.

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[118] Bagchi, *Private Investment*, pp. 5-9, 262-90.

[119] Bishnupriya Gupta, "Why did Collusion Fail; The Indian Jute Industry in the Inter-War Years", *Business History* 47.4 October 2005, pp. 532-552.

[120] Stewart, *Jute and Empire*, pp. 56-62,

Table 4.4: Chairmen of the IJMA; Presidents of Bengal Chamber of Commerce elected from IJMA member firms.

Year	Chairman of IJMA	Firm	President of Bengal Chamber of Commerce	Firm
1884	JJJ Keswick	Jardine, Skinner	JJJ Keswick	Jardine, Skinner
1885	JJJ Keswick	Jardine, Skinner	JJJ Keswick	Jardine, Skinner
1886	James Henderson	Henderson		
1887	Robert Williamson	Finlay, Muir		
1888	Robert Williamson	Finlay, Muir	Sir Alex Wilson	Jardine, Skinner
1889	Robert Williamson	Finlay, Muir	Sir Alex Wilson	Jardine, Skinner
1890	George Cheetham	Henderson	James Mackay	Mackinnon, Mackenzie
1891	Allan Arthur	Finlay, Muir	Hon James Mackay CIE	Mackinnon, Mackenzie
1892	George Lyell	Macneill	Hon James Mackay CIE	Mackinnon, Mackenzie
1893	George Lyell	Macneill	Hon P Playfair	Barry
1894	George Lyell	Macneill	Allan Arthur	Finlay, Muir
1895	George N Nairn	Thomas Duff	Hon P Playfair	Barry
1896	George Lyell	Macneill	Hon P Playfair CIE	Barry
1897	WB Colville	Bird	Allan Arthur	Finlay, Muir
1898	WB Colville	Bird		
1899	DC Blair	Finlay, Muir	Allan Arthur	Finlay, Muir
1900	John Nicoll	Thomas Duff	GH Sutherland	Begg, Dunlop
1901	John Nicoll	Thomas Duff	MC Turner	Mackinnon, Mackenzie
1902	WS Malcolm	Henderson	MC Turner	Mackinnon, Mackenzie
1903	John Nicoll	Thomas Duff	Sir E Cable	Bird
1904	Archy Birkmyre	Birkmyre Bros	Hon AA Apcar	Apcar & Co
1905	John Nicoll	Thomas Duff	Hon AA Apcar	Apcar & Co
1906	Archy Birkmyre	Birkmyre Bros	Hon AA Apcar CSI	Apcar & Co
1907	A Wighton	Thomas Duff	Hon AA Apcar CSI	Apcar & Co
1908	JB Strain	Bird	W Brown	Finlay, Muir
1909	Archy Birkmyre	Birkmyre Bros		
1910	RHA Gresson	Jardine, Skinner	AM Monteath	Mackinnon, Mackenzie
1911	J Robertson	Thomas Duff		
1912	J Mackenzie	Macneill	AM Monteath	Mackinnon, Mackenzie
1913	AR Murray	Thomas Duff	Hon AM Monteath	Mackinnon, Mackenzie
1914	FRS Charles	Henderson	RG Monteath	Mackinnon, Mackenzie
1915	W Ross Smith	Bird	Hon FH Stewart CIE	Gladstone, Wylie
1916	Hon Archy Birkmyre	Birkmyre Bros	Hon FH Stewart CIE	Gladstone, Wylie
1917	AR Murray	Thomas Duff	Hon EH Bray	Gillanders, Arbuthnot
1918	AR Murray	Thomas Duff	Hon W Ironside	Bird
1919	AR Murray	Thomas Duff		
1920	GF Rose	Andrew Yule	AR Murray	Thomas Duff
1921	DP McKenzie MLC	Duncan Bros		

Sources: Adapted from Wallace, *The Romance of Jute* (London, 1928), p107; Bengal Chamber of Commerce, Annual Report 2011-12,

Thomas Duff & Co and the IJMA, 1884-91

What was the attitude of Thomas Duff to the IJMA during the period to 1921? Was it effective in achieving its objectives?

Table 4.4 demonstrates the importance attached to the Indian Jute Mills Association through the participation of the British managing agents. Several of those serving as Chairman of the Association went on to become Presidents of the Bengal Chamber of Commerce, the pinnacle of the European business establishment in India. On occasion, they served as members of the Bengal Legislative Council, of the Viceroy's Executive Council, and on various Government of India Commissions affecting colonial policy.[121] Amongst the British managing agents, Thomas Duff & Co wielded disproportionate influence relative to their market share in securing the chief representative role in the Association in eleven years out of thirty-nine to 1921.

Other individual managing agents elected Chairmen for five years out of thirty-nine at most during this period. The governance of the IJMA consisted of a Chair supported by a Committee of four elected at the annual general meeting, with a full time Secretary delegated to handle the day to day business who often also served as Secretary of the Bengal Chamber of Commerce.[122] From 1904-21, Thomas Duff & Co were represented on the Committee or as Chairman in every year except 1912. The two other leading managing agents in the jute industry by market share, Bird and Yule, only assumed a similar prominence in the

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[121] Examples include Robert Steel CSI, of the large raw jute dealers R Steel & Co, and a director of three of Andrew Yule's mills from 1873-1900, who served on the Viceroy's Council from 1886-90, and was consulted by the Indian Currency Commission in 1898. Steel was only the second non-official awarded the CSI. "Current Events", *Times of India*, 15 Mar 1898, p. 7. John Nicoll served as Chairman of the IJMA in 1900-01 and on the Indian Factory Labour Commission from 1906-08 in the interim between retiring as commercial manager of Thomas Duff & Co in Calcutta and joining the board in Dundee. "With Dundee Folk in Calcutta", *Dundee Courier*, 10 Dec 1907, p. 7. Sir Alexander R Murray KCIE CBE, Thomas Duff & Co general manager 1916-21, and a director 1933-54, was promoted from Chairman of the IJMA to the President of the Bengal Chamber of Commerce. He was a Governor the Bank of Bengal and the Imperial Bank of India from 1921-27, knighted in 1921, and served on the Indian Retrenchment Committee 1922, as employer delegate for India to the ILO in 1919 and 1924, on the Indian Currency Commission 1925, and became a governor of the Imperial Bank of India, and a member of the Bengal legislature, the Imperial Legislative Council, and the Council of State, returning to the UK in 1928, acting as Chair of the Special Tariff board in 1935. "Sir A. R. Murray", *Scotsman*, 23 Jun 1936, p. 16.

[122] Indian Jute Mills Association, annual *Reports of the Committee*, (Calcutta, 1904-21).

representative positions on the Committee from 1906 and 1914 respectively.[123] This suggests a level of commitment and a competence on the part of Thomas Duff from an early stage to furthering the goals of the Association, one which was acknowledged by its other members who consistently voted for them to be represented in its governance even to the detriment of their own representation.

It should be noted that Thomas Duff & Co were not the first converts to the cause of combination. Embryonic efforts in this direction were made in 1878 by Finlay, Muir & Co in conjunction with Birkmyre Brothers and again in 1885.[124] Once converted, the minute books of Thomas Duff & Co, and of their managed companies, Samnuggur and Titaghur mills, reveal an unwavering enthusiasm for the use of short time and other measures to control output and support prices that persisted into the 1930s when other established firms such as Bird & Co were losing faith in it.[125] The directors of Samnuggur stated in their annual report of April 1886 in relation to short time working that they were "satisfied the result has been greatly to the benefit of the trade, and they expect yet to see a greater improvement."[126] At the end of short time working in 1891, they reported:

> The directors are convinced that the association [for short time] has been a great help to the trade while it lasted, and they will be prepared to advocate and support the re-formation of it when they deem the time opportune and there is a reasonable prospect of arranging a sound and satisfactory agreement.[127]

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[123] IJMA, *Report of the Committee*, various years, passim. SEJ Clarke, William Parsons and Horace M Haywood CIE succeeded eachother at filling both roles simultaneously. GM Barton was an assistant secretary of the IJMA; both he and Haywood assumed the role of secretary to the Indian Tea Association as well. There was a substantial overlap between the most influential members of the Bengal Chamber and the IJMA and ITA and their offices and secretariats were all located in the Bengal Chamber of Commerce building.

[124] Champdany Co, MOTD, 6 Feb 1878; Champdany Co, MOTD, 19 May 1885.

[125] UDA, MS 86/1/1/1-18, Samnuggur Co, MS 86/3/1/1-17, Titaghur Co, MS 86/5/1/1-3, Thomas Duff & Co. See also, Gupta, ""Why did Collusion Fail?", Stewart, *Jute and Empire*.

[126] MS 86/1/1/2, Samnuggur Co p117, minute of AGM, 28 April 1886.

[127] MS 86/1/1/3, Samnuggur Co, p. 276, minute of AGM, 27 Feb 1891.

The rise and fall of the short time agreements begs the question why Thomas Duff & Co were so committed to the IJMA despite all the evidence presented of the palpable strains resulting on its marketing network. But this is only half the picture. Smith's correspondence only gives a snapshot of several months in which particular destination markets were in play:

There was also a bedrock of relative productive efficiency, as demonstrated in Chapter 2, which permitted the mills managed by Thomas Duff & Co to continue paying 10% dividends apart from the exceptional years from 1884 to 1886 when the Union mill was about the only Calcutta mill to pay a dividend. The original shareholders of Samnuggur were well compensated for these lean years, since the issue of bonus shares in Titaghur in 1883 meant effectively they were receiving an average 20% dividend on their original investment. Meanwhile, the Dundee directors were also able to see off the threat represented by the Victoria Co and a rival constituency of shareholders competing in the Dundee capital market. The Victoria Co's victory in the lawsuit over land rights proved to be a pyrrhic one as their directors ceded the agency in Calcutta to Thomas Duff & Co and permitted the latter's directors to start the process of acquiring substantial shareholdings in Victoria.[128] By the standards of the Dundee capital market, only the better performing investment trusts such as the Alliance could approach this level of performance in the long run.[129]

Navigating by the standard of neoclassical optima, this view might draw the retort that the Dundee firm could have performed still better by working full time, reducing working costs, and undercutting its rivals. However, this abstracts from the institutional context of the industry. There were real dangers inherent in such an approach, especially for a specialist jute manufacturer lacking the financial power and the vertical and horizontal diversification into related and unrelated industries of its rivals. Short time working was a lower risk strategy

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[128] MS 86/5/1/1 Thomas Duff & Co, 9 Oct 1889, p. 67.

[129] Claire Swan, 'Dundee as a centre of financial investment': the origins and development of the Scottish investment trust industry, c. 1870-1914', unpublished PhD thesis, University of Dundee, 2009; Munn, *Investing for Generations.*

which provided a greater degree of certainty during a period of depressed markets which permitted Thomas Duff & Co to perform relatively well.

Similarly, it can be argued that the Association was relatively successful up to 1921 in reconciling the interests of stronger and weaker mill companies. Stronger mills were able to continue paying an acceptable level of dividends while most of the weaker mills were able to weather poor trade conditions. Andrew Yule's Central mill and Gillanders, Arbuthnot's Hooghly mill both joined the Association during the 1890s while the other mill working outside the agreements from 1886-90, the Serajgunge, ceased operating.

The Association's effectiveness can be seen from the impact of the short time agreements on barriers to entry over time. New entrants to establish a position in the industry successfully between the IJMA's formation in 1885 and 1918 were Anderson, Wright & Co (1895), Begg, Dunlop & Co (1895), Duncan Brothers (1896), FW Heilgers & Co (1899), Mcleod & Co (1907), and Bemis Brothers (1913). With the exception of the American Bemis Brothers, they all had established relationships with the managing agents already invested in jute as part of the British mercantile community in Calcutta, although the Jewish merchant Meyer was the real power behind the Khardah mill managed by Anderson, Wright. The Indian owned Soorah mill, the Armenian owned Alexandra and Arathoon mills, and British projects initiated by Gordon Stewart and James Luke Jr – respectively a defector from Bird & Co and a reject from the Victoria Co – all failed to get off the ground and were taken over by existing IJMA members. Certainly, none of the mills formed by new entrants were constructed during the currency of the short time agreement to 1891. The counterfactual that more of the new entrants could have been deterred by full time working and adherence to market determination of output prices is implausible, given the poor trading conditions during the currency of the agreement. In any case, the original members of the IJMA seem to have done relatively well at maintaining or increasing their market share in terms of investment in additional capacity during this period:

Table 4.5: Share of investment in additional capacity measured in looms in operation.

	1890-99	1900-09	1910-19
IJMA founders new capacity	7,487	9,567	7,440
New entrants' new capacity	994	5,872	1,388
Total new capacity	8,481	15,439	8,828
IJMA founders' share of new capacity	88%	62%	84%
New entrants' share of new capacity	12%	38%	16%

Source: IJMA annual *Reports of the Committee*; Statement of looms in *Dundee Yearbook*, 1890-; cross-referenced against annual reports of mill companies published in *Dundee Advertiser* and Capital, 1890-1919.

As Table 4.5 above indicates, accelerating investment in new capacity took place for the next two and a half decades leading up to the war of 1914, accompanied by mills working full time for most of the period. The upswing in the world economy leading to the growth of demand for jute manufactures was punctuated by short crises where mills resorted to short time. Short time working of five days a week was resorted to for three months in 1894 owing to a crisis in the raw jute market caused by erroneous price expectations and speculation, and again for a month in 1899 in the context of the dislocation to markets caused by urban plague scares and Indian crop failures.[130] The American financial crisis of 1906 led to the adoption of working without electric light for six months succeeded by five days working during the recession of 1908-10.[131] Dislocation to shipping, freights and money markets during the war were mitigated by a degree of short time combination, which was extended in the years after the war in the context of macroeconomic adjustment, exchange rate instability, inflation and monetary austerity.[132] Thomas Duff & Co were generally amongst the first to advocate working time agreements in response to adverse economic circumstances and the last to abandon them in periods of recovery.

[130] MS 86/1/1/6, Samnuggur Co, MOTD, 11 May 1898, p. 89; MOTD, 8 Feb 1899, p. 223.

[131] MS 86/1/1/11, Samnuggur Co, MOTD, 16 Dec 1907, p. 349; MS 86/5/1/3, Thomas Duff & Co, Minute of AGM, 19 Mar 1909, p. 84.

[132] MS 86/1/1/15, Samnuggur Co, MOTD, 11 Aug 1914, p. 211; MS 86/1/1/17, Samnuggur Co, MOTD, 5 Nov 1918, p. 131.

As the IJMA consolidated itself in the more typical form of a traditional employers' federation, five successive general managers of Thomas Duff & Co's Calcutta office were appointed to the IJMA Committee and served as Chairmen for 11 years from 1895-1921, all of them later returning to Dundee to take a seat on the board of directors. John Nicoll, Chairman in 1900-01 and 1905, was appointed to sit on the East India Factory Labour Commission on his retirement in 1906.[133] The appointment of Sir Alexander Murray in 1920 as President of the Bengal Chamber of Commerce representing Thomas Duff & Co, a jute specialist with no interest in the other major sectors of the Bengali economy, marked the recognition of the importance of jute manufacturing, and Thomas Duff's role in the industry, by their peers amongst the British managing agents.[134]

The minute books of Thomas Duff & Co and the annual reports of the Association indicate that Thomas Duff & Co were active in influencing IJMA policy during this period relating to a wide range of issues - municipal governance and sanitation, labour, European supervisors and Saturday working, vertical integration and relations with jute and gunny brokers and shippers, and the negotiation of government war orders. There remains one episode pertinent to the question of the efficacy and limits of combination considered in this section to be discussed. This concerns the failed proposal to qualitatively transform the Association into a formal industrial combine along American lines, in accordance with the recommendations of the American industrial consultant, John H Parks, which has been recounted in Gordon Stewart's work *Jute and Empire*.[135] The scheme was instigated through an introduction between Parks and Sir David Yule of Andrew Yule & Co, who convened a meeting of the larger managing agents, representing two thirds of the total looms in Calcutta, in London on 10th October, 1911. Birkmyre Brothers and Thomas Duff & Co declined to attend, and James Finlay & Co withdrew

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133 "With Dundee Folk in Calcutta", *Dundee Courier*, 10 Dec 1907, p. 7.

134 "Sir A. R. Murray", *Scotsman*, 23 Jun 1936, p. 16.

135 Stewart, Jute and Empire, pp. 58-60.

their support for the scheme, which Stewart states was perceived as "a power grab by the big Managing Agency firms".[136] The proposal was formally presented to the IJMA prior to the general meeting of February 1912. It may not have been coincidental that this occurred just as James Robertson of Thomas Duff & Co was standing down as Chairman and one of the schemes promoters, J Mackenzie of Mackinnon, Mackenzie, was elected in his place to a committee with no Thomas Duff representative elected.[137] In any event the scheme lapsed in the face of an upturn in the industry's fortunes as demand absorbed the excess production caused by frenetic extensions in the preceding years. Stewart cites the impracticability of the scheme's proposals for controlling raw jute prices given the large number of Indian intermediaries in this market, concerns about the consequences of forcing up output prices, and the conservatism of business in Calcutta with regard to institutional change.[138]

The details of the scheme were leaked to *Capital* in March, 1912. It consisted of three pools for raw jute inputs, and hessian and sacking outputs which would regulate prices and a percentage paid out in profits based on a weighted average for each mill calculated on the basis of productive capacity, output and productivity in a previous production period adjusted for any extensions up to the point at which 90% of members signed up to the combine.[139] The scheme also contained penalty clauses for overproduction of Rs100 per ton (approximately 25% of the sales value per ton), while permitting the negotiation of "quota rights" to be exchanged between mills not fulfilling their quota.[140] The perception that this would favour firms like Andrew Yule & Co and Bird & Co was therefore accurate in that the scheme effectively froze mills' market share after a period in which these two firms had been the most

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[136] Ibid, p. 59.

[137] *IJMA Report of the Committee* 1911, (Calcutta, 1912), pp. i-viii.

[138] Ibid; see also reports in *Times of India*, 9 Nov 1911, p. 4; 21 Nov 1911, p. 4; 15 Dec 1911, p. 10; 25 Jan 1912, p. 7

[139] "Mr Parks's Scheme", *Capital*, pp. 537-9, 29 Feb, 1912.

[140] Ibid.

active in bringing new capacity into operation. It is therefore unsurprising that Thomas Duff & Co refused to entertain supporting it when they were in the process of planning to add significantly to the Samnuggur mill's productive capacity. Curiously, the directors' minutes in Dundee and the reports to shareholders of the mill companies in spring 1912 made no reference to the scheme while they were actively commenting on Association matters in relation to the introduction of the new Factory Act.[141] This uncharacteristic reticence in relation to a matter affecting the Association may suggest that Thomas Duff & Co were not unduly concerned about the putative combine's prospects of being put into effect.

Thomas Duff & Co's role in the IJMA demonstrates the importance they gave to managing market conditions. As the next chapter shows, this facilitated the retention of family control through high dividend payments.

[141] MS 86/5/1/3, Thomas Duff & Co, Minute of AGM, 19 Mar 1912, p. 173.

Chapter 5. Shareholdings in the Thomas Duff & Co Group, 1874-1921.

The chapter undertakes a detailed survey of how the Thomas Duff & Co directors were able to retain effective control of the firm while raising sufficient investment funds to maintain market share in an expanding industry through the creation of a more popular and dispersed base of shareholders.

The analysis in this chapter is based on the population of 1162 shareholders listed as holding a share in one of the mill companies in any share issue listed in the minutes of the directors of the Samnuggur, Titaghur and Victoria Cos from 1874 to 1919. This may omit some shareholders who held shares for shorter periods in between share issues. The listings give very partial shareholder characteristics, such as profession or location in some cases, but have been supplemented by very extensive original biographical research drawing on a range of sources, such as census data and trade directories.

The detailed analysis of the initial shareholdings in the Samnuggur, Titaghur and Victoria mills showed that they were dominated by personal ties, based on family or business relationships whose centre of gravity was in Dundee, and to a much lesser extent in Calcutta. However, the capital demands of the growing firms over time could not be sustained purely on the basis of personal ties. The directors of the firms were forced to seek a wider shareholding basis – in social and geographical terms. Over time, there would also be a greater role for the intermediation of brokers allocating shares on the basis of impersonal market transactions. Nevertheless, it will be argued that detailed analysis of new share issues up to 1921 show that the allocation of shares based on personal ties remained at the core of the firm and was sufficiently pronounced to render any external challenge to the directors' control unlikely. As the preceding analysis has shown, the shareholders were largely passive and instances of dissent were extremely rare. The only example of organized shareholder dissent that could be discerned was the objection of a minority of the Victoria Co shareholders to an issue of new preference shares in 1897.[1] The attempt of Alex C Scott, the sometime Chairman of Samnuggur and Titaghur, to challenge the policies of the directorate and the managing agency was stillborn before matters reached the Annual General Meetings of the mill companies in 1901.[2] This passivity derived from the fact that shareholders were content to receive above average dividends consistently relative to alternative investment opportunities, and many of them had personal ties to at least one of the directors.

In this section, detailed quantitative analysis of new share issues from internal firm records is combined with very extensive research into the biographical data of the mass of individual shareholders. The biographical data include information collected from a range of sources – household census enumerators, trade directories, newspaper reports and obituaries, inventories of estates registered in Scotland and probates registered more widely – in order to permit a detailed picture to emerge of the mass of shareholders. This biographical information is then collated to create a classification of the characteristics of the shareholders and change over time – in terms of the distribution of shareholders around certain key variables, such as income, occupation and gender, as well as whether they were "insiders" or "outsiders" according to their relationship to the directors of the firms. Throughout this section, for simplicity, data are considered only for holdings of ordinary share. Holdings of preference shares are excluded as they were issued pro rata on the basis of ordinary shares held. There is

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[1] The issue was resolved by an amendment proposed by the well known Dundee jute merchant IJ Weinberg passed by 6837 to 668 to delay issuing preference shares for six months, MS 86/2/1/1, Victoria Co, Minute of Emergency General Meeting, 1 Jul 1897, p. 200.

[2] MS 86/1/1/7, Samnuggur Co, Minute of AGM, 6 Mar 1901, p. 215; MS 86/3/1/6, Titaghur Co, Minute of AGM, 6 Mar 1901, p. 249; MS 86/5/1/2, Thomas Duff & Co, Minute of AGM, 3 Apr 1901, p. 130.

insufficient data to consider how holdings of ordinary and preference shares diverged over time through differential trading in each category because of the relatively late appearance of preference shares during the period of study. The data provided to identify the holders of the companies' debentures is also too scanty to permit them to be analysed and contrasted with holders of ordinary shares.

Shareholders and directors' control.

One way to examine the relationship between the reproduction of directorial control and shareholder passivity is to consider what level of ownership the directors considered it necessary to retain in the equity of the firms they managed in order to retain effective control. A straightforward calculation based on the shareholdings of the individual directors would be misleading because of the proliferation of shareholdings amongst close family members. Table 5.1 below estimates the percentage of shares controlled by individual directors by aggregating their individual shareholdings with shares held by close relatives – parents, siblings and children or by in-laws through the marriage of a sibling or child of a director. Table 5.1 also traces the degree of continuity of effective control by the five founders of the firm – the four directors Duff, Barrie, James and Alex Nicoll, and the mill manager of Samnuggur Robertson – and compares their holdings in the Samnuggur and Titaghur Cos with those of newcomer directors over time.

Table 5.1: Share of families and in-laws of four original directors and mill manager, percentage of total value of ordinary voting shares issued, (all values are nominal)
S = Samnuggur, T = Titaghur.

Year	Co	5 founders, value of shares	5 founders share of total capital	*New directors	Thomas Duff/ Walter William Duff	Alex Nicoll/ William & John Smith/ Whytocks	Joseph Barrie/ Charles B Ovenstone/ Buists	James Nicoll /Dow	James Robertson Sr &Jr
1874	S	£92,000	76%	2%	33%	24%	12%	4%	3%
1883	S	£105,300	70%	2%	27%	23%	12%	4%	4%
1883	T	£83,410	79%	3%	27%	32%	12%	4%	4%
1888	T	£105,800	71%	2%	24%	24%	12%	4%	6%
1895	T	£80,920	40%	13%	13%	8%	13%	2%	4%
1897	T	£73,180	37%	13%	10%	7%	13%	3%	4%
1901	S	£61,970	31%	12%	7%	8%	12%	2%	2%
1913	S	£46,700	16%	13%	2%	0%	7%	6%	1%
1919	T	£97,570	22%	14%	5%	2%	8%	5%	2%

* Includes shares held prior to promotion to the directorate.

Sources for this and subsequent tables in Chapter 5: The family relationships identified and other information relating to residential location and occupation are based on extensive biographical research from obituaries and other articles in the Dundee Advertiser, Dundee Courier, Scotsman and The Times, from census data from 1841-1911, and from probates and inventories in the National Archives of Scotland. Information for occupation and residence in Calcutta and Dundee has been cross-referenced with Thacker's Directory and the Dundee Directory respectively. The information for shareholdings is drawn from the following sources in the University of Dundee Archive, MS 86 relating to the Thomas Duff group of companies. Some of these shareholder lists also provide information for residence and occupation.

Lists of share issues from MS 86/1/1/1, Samnuggur Co, MOTD, p. 1, 8 Sep 1874, p. 60, 19 Dec 1876, Minute of Emergency Special General Meeting, pp. 261-6, 27 Jun 1883; MS 86/1/1/7, Samnuggur Co, pp 242-9, 13 Mar 1901; MS 86/3/1/2; MS 86/1/1/14, Samnuggur Co, MOTD, pp275-287, 14 Jan 1913; Titaghur Co, pp 21-23, 28 Nov 1888; MS 86/3/1/4, Titaghur Co, MOTD, pp 79-83, 11 Sep 1895; MS 86/3/1/4, Titaghur Co, MOTD, pp. 416-21, 19 May 1897; MS 86/3/2/9, Titaghur Co, Share Allotment Book, 1919-69, pp 1-23; MS 86/2/2/7, Victoria Co, Lists of shareholders, 1883; MS 86/2/1/1, Victoria Co, p. 228, 28 Jan 1898; MS 86/2/1/4 Victoria Co, pp. 194-203, 16 Oct 1919.

The table shows very clearly how the directors and their immediate families owned a declining proportion of the total value of the equity of the firms they managed and controlled. The decline in the founders' share of the equity was not compensated by the proportion of shares held by promoted directors. In absolute terms, the value of Samnuggur shares held by the five founders and their immediate families declined from a high point of £105,300 in 1883 to £46,700 in 1913. The equivalent value for Titaghur declined from £105,800 in 1888 to £97,570 in 1919. It should be recalled, however, that any decline in income from dividends in the mill companies was more than compensated for by increased income from the managing agency, as illustrated in Table 5.1.

Another notable feature of the data in the table is that some individual directors were much more successful at retaining their equity stakes through family networks than others. Thus, Thomas Duff was not very successful at passing on his stake in the firm - in which he was the largest shareholder, and of which he was the most import instigator - despite his son Walter joining him on the board of directors. From holding a third of the shares at the time of Samnuggur's formation, the Duff family's stake had declined to 2% and 5% respectively in the Samnuggur Co in 1913 and in the Titaghur Co in 1919. The elder Thomas HK Duff, (born in Calcutta in 1858[3] and named after Herbert Knowles, Duff's Calcutta colleague and successor at the Barnagore mill), does not appear to have been interested in joining the family firm. He studied as a "farm pupil" at the Hall's 700 acre estate at Oxnead, Norfolk.[4] He then departed for the Katikati estate in New Zealand, settled by Orangemen in the 1870s, presumably to try his hand at some combination of land prospecting and farming, where he married the local preacher's daughter.[5] He died penniless with no fixed abode in Edinburgh in 1900 having abandoned his wife.[6] He may have been disowned by his family as his inventory bears no record of the 400 shares that Thomas Duff transferred to the marriage trust held jointly with his wife.[7] Duff's second son also appears to have been a reluctant participant in the business. Educated at Trinity College, Glenalmond, and Jesus College, Cambridge, he went out to Calcutta in the early 1880s but appears to have taken no active role in the business on his

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[3] 1871 England Census household enumerator, Class: RG10; Piece: 1637; Folio: 192; Page: 5; GSU roll: 829941.

[4] 1881 Engalnd Census household enumerator, Class: RG11; Piece: 1930; Folio: 101; Page: 10;GSU roll: 1341465.

[5] "Marriage. Duff – Johnston." *Bay Of Plenty Times*, Volume XIII, Issue 1701, 21 Jun 1884, p. 2; http://en.wikipedia.org/wiki/Katikati.

[6] Thomas Duff inventory SC 70/1/393 registered at Edinburgh Sheriff Court, 14 Sep 1900, pp. 1048-1054.

[7] Ibid; MS 86/1/1/7; Samnuggur Co, MOTD, 13 Mar 1901, pp. 242-9.

return to the UK.[8] His appointment to the directorate in the 1890s was probably motivated by his father's increasing infirmity and his contribution to the directorate was notable chiefly for his reluctance to take up his responsibility to visit Calcutta, a paucity of any other business interests, and a preference for golf and participation in the St Andrews Conservative Club.[9] Thomas Duff Sr does not appear to have been particularly effective at using the "marriage market" as a means of securing business objectives. None of his eight daughters married into the jute industry but secured a healthy rentier income from their shareholdings in the Samnuggur and Titaghur Cos. In all, the Duff family network of 16 shareholders comprised Duff himself, his wife, his two sons and eight daughters, one son-in-law, one daughter-in-law, and two grandchildren.

Alex Nicoll's family network contrasts with Duff's in the sense that it drew together a number of figures through marriage. His brother-in-law was the jeweller John Whytock, who held shares. His son-in-law was William Smith, the general manager in Calcutta until 1892. Alex Nicoll's financial difficulties meant that he had divested his shares by 1893. William Smith's children inherited a portion of his shares upon his death in the same year. Smith's brother John also had a large shareholding but did not marry. The Alex Nicoll-Whytock-Smith family network comprised 13 shareholders. From 24% at the inception of the Samnuggur Co, the family's stake dwindled to nothing at the time of the Samnuggur share issue of 1901 and 2% in the Titaghur issue of 1919.

Joseph Barrie's family network was rather more successful at maintaining its stake in the companies, despite the fact that Barrie himself did not marry. The network comprised 34 members of the Barrie, Buist and Ovenstone families with his nephew, the director Charles Barrie Ovenstone, at its heart. Ovenstone's brother-in-law, Andrew Buist, was from a well

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[8] JA Venn, *Alumni Cantabrigienses*, (Cambridge, 1922); "Noted St Andrean's Death. Dundee Business Man." *Dundee Advertiser*, 1 Feb 1933.

[9] Ibid., "Noted St Andrean's Death.". Walter Duff visited Calcutta twice, in 1902 and 1912, during his 29 year tenure as a director to 1921.

known family of Dundee jute manufacturers and took a large shareholding. Barrie and Buist later went into business as the directors of the Dundee-based Buist Spinning Co. From a 12% stake initially the family network retained a 7% stake in Samnuggur in 1915 and 8% in Titaghur in 1919, which actually represented an absolute increase in the shareholdings compared to the initial holdings in each company.

James Nicoll's family network of 16 shareholders increased its stake from his own 4% stake in 1874 to 6% and 5% respectively in Samnuggur in 1913 and Titaghur in 1919, mainly through his own longevity as a director. The network consisted of himself, his wife, seven children, his children's nurse, a father-in-law, a sister-in-law, a son-in-law, and three siblings of his son-in-law.

How did the directors' shareholdings in the managed mill companies compare with their shareholdings in the managing agency, as depicted in Table 5.2.

Table 5.2: Distribution of ordinary shares in Thomas Duff & Co, managing agents.

Year	Paid up capital	Thomas Duff/ Walter William Duff	Alex Nicoll/ Smith	Barrie/ Ovenstone	James Nicoll	James Robertson	5 founders	New directors
1883	£4,000	40%	34%	15%	6%	5%	100%	0%
1888	£4,000	40%	34%	15%	6%	5%	100%	0%
1895	£5,000	50%	10%	6%	10%	8%	83%	18%
1897	£5,000	16%	14%	11%	14%	9%	63%	38%
1901	£12,500	13%	16%	14%	11%	8%	61%	39%
1913	£25,000	15%	0%	16%	13%	8%	52%	48%
1919	£50,000	14%	0%	15%	12%	7%	47%	53%

The initial shareholdings of the five founders in the managing agency corresponded initially to their relative shareholdings in the mill companies. Over time, the shareholdings in the managing agency were equalised between the directors while family networks were of limited importance in the allocation of shares. After William Smith's and Thomas Duff's deaths in 1893 and 1896, and Alex Nicoll's resignation as a director in 1893, no family network was represented by more than one director in the managing agency. The chief feature to note about the distribution of shares was the growing proportion of shares held by new directors promoted through the managerial hierarchy in Calcutta, and a majority by 1919. The old directors held 47% of the agency shares and 22% of Titaghur's shares in 1919. By contrast, newcomer directors held 53% of the agency shares but only took up 14% of the Titaghur shares, indicating the increased importance of the managing agency as their chief source of income within the group which, in effect, signalled a widening gap between the ownership and the management of the mills.

It is also informative to examine the integration of the Victoria Co into the Thomas Duff group with reference to its directors' shareholdings relative to the shares held by Thomas Duff & Co directors. While the Victoria Co directors' stake declined from 41% in 1883 to 22% in 1919, the stake of the Thomas Duff & Co directors increased from 1% to 19%, nearly equal to the Victoria directors.

Table 5.3: Integration of ownership of Victoria Co into Thomas Duff & Co (TD) network, percentage holdings of ordinary shares of Victoria Co, (all values are nominal).

Year	Total ordinary share capital	Victoria directors	TD directors	Victoria directors	TD directors
1883	£50,850	41%	1%	£20,700	£750
1899	£150,000	21%	13%	£30,800	£22,480
1919	£300,000	22%	19%	£64,840	£61,660

So far, this section has discussed individual directors' shareholdings and the extent of their ownership in terms of family networks. While the latter measure is a better measure to compare their interest in the equity of the firms they managed relative to other directors, it is less satisfactory as a measure of the effective control of the directors. A more comprehensive measure is to distinguish between "insider" shareholders and "outsider" shareholders, classifying shareholders according to whether they had a personal tie to one of the directors or a tie based on employment or transacting with the firms. A comparison of the proportions of shares held by insiders relative to outsiders according to this classification gives a better sense of the ability of the directorates of the firms to mobilise a majority of shareholders in any contested vote, as shown for the Titaghur Co, comparing the years 1883, 1897 and 1919, in Table 5.4. The classification is somewhat arbitrary in that it assumes an identification with the policies of the directors by those who were family members, or employees or regular transactors with the firm. Although the biographical research into the shareholders was able to identify details for occupation and geographical location for the great majority of shareholders, the classification probably overestimates the number of "outsiders" where it was not possible to identify a link with the firm and the individual shareholder in terms of the variables employed to assign shareholders to the "insider" category.

Table 5.4: Titaghur Co Insider versus Outsider Shareholders, 1883-1919.

	1883	1897	1919
Insiders	21	48	105
Outsiders	20	145	367
Insiders % of shares	84%	60%	45%
Outsiders % of shares	16%	40%	55%
Insiders average shareholding	420	244	193
Outsiders average shareholding	84	54	67

*Insiders includes institutional shareholders. Unidentified are assumed to be outsiders and are therefore probably overestimated.

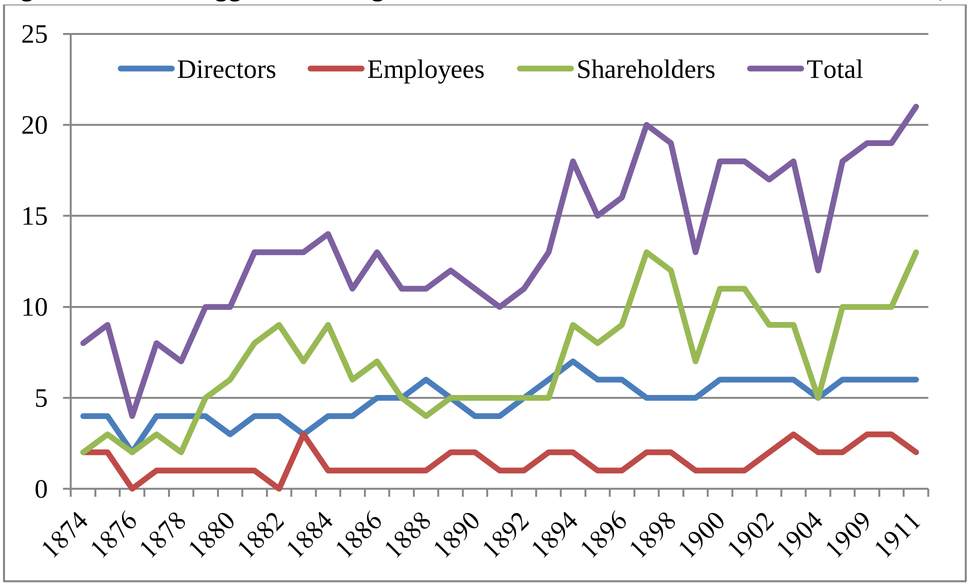
The comparison between the three years clearly identifies that the numerical proliferation of outsiders as shareholders was well established by 1897 and continued up to 1919, reflecting the deepening of the firm's capital base as its equity grew larger. The value of shares held by outsiders constituted a large minority stake by 1897 and a slight majority by 1919. However, given that a greater motivation and propensity to activism can be reasonably assumed on the part of insiders, it is unlikely that this caused undue concern on the part of the directors that their control might be challenged. Insiders were much more likely to attend general meetings; outsiders were more likely to be resident at a distance from Dundee. In fact, the registration of shareholders to participate in proxy votes at annual meetings was exceptional, the meeting of

1901 prior to Alex C Scott's exit from the firm being almost the only example, and in this case the proxies were only registered because of the activism of the majority of the board to secure proxies on their own behalf rather than due to any independent activism on the part of the shareholders themselves.[10] Both insiders and outsiders held less shares on average over the whole time period, probably reflecting an aspect of the deepening of the capital base – the increased participation of shareholders from the popular classes. However, the average shareholdings of outsiders increased slightly in the sub-period 1897-1919, reflecting the satisfaction of an excess demand for shares by the 1919 share issue. Insiders on average held considerably more shares than outsiders in any given year, about five times as many in both 1883 and 1897, but the gap narrowed in 1919 to three times as many, which may reflect a greater willingness on the part of insiders to take advantage of high share prices to realise a capital gain towards the end of the subperiod.

Figure 5.1 shows the attendance of shareholders at Annual General Meetings of the Samnuggur Co from 1874-1911. The shareholders in attendance at the AGMs of the Titaghur Co, which were held immediately following those of the Samnuggur Co, were identical except for one individual in two years.

[10] MS 86/1/1/7, Samnuggur Co, 6 Mar 1901, p. 215.

Figure 5.1: Samnuggur and Titaghur* Cos Attendance of Shareholders at AGMs, 1874-1911.



* Titaghur Co from 1883. Attendance was identical except in one or two rare cases.

Source: MS 86/1/1/1-14, Samnuggur Co, Minutes of AGMs, 1874-1911. Missing years: 1905, 1907-08.

The attendance of shareholders who were not directors or employees of the firm averaged about five until the end of the century then rose to about ten after the new share issues increased the number of shareholders. However, only a small proportion of shareholders attended meetings and that proportion declined, suggesting an increase in shareholder passivity as more outsiders took shareholdings. In all, only 65 individuals who were not employees or directors attended the meetings during the 35 years recorded, indicating that more or less the same insiders attended over a number of years.

A similar classification is applied to the Victoria Co in Table 5.5 except, in this case, Thomas Duff & Co insiders are included as a separate category – or as a special category of outsider, at least until 1918 when the Victoria Co was consolidated into the Thomas Duff & Co group.

Table 5.5: Thomas Duff & Co directors' increasing stake in Victoria Co.

	1883*	1899	1919
Victoria insiders	33	39	28
TDC insiders	4	37	67
Outsiders	6	127	238
Victoria insiders % of shares	91%	48%	34%
TDC insiders % of shares	4%	16%	+29%
Outsiders % of shares	5%	36%	37%

*Assumes jute, steel and shipping interests were business associates of Victoria directors; +upper estimate includes Alexander Nicoll's 900 shares, who stood down as a director of Samnuggur and Titaghur to join the board of Victoria. ++Includes defector Wybrants.

The patterns are similar to the Titaghur Co, except that most of the outsider shares taken up between 1897 and 1919 went to Thomas Duff & Co insiders while the share of other outsiders remained static. Probably, a large number of the shares acquired by Thomas Duff & Co insiders were acquired around the time the firm was consolidated into the group. Nevertheless, it is possible that, had the Victoria Co directorate not agreed to the consolidation of the firm into the group, their managing agents might have been in a position to organise sufficient shareholders to force it through without the directors' agreement.

Survey of Ordinary Shareholders.

The previous section examined the relationship between ownership and the reproduction of the directors' effective control of the firms they managed over time as the size of the firm's equity increased and was distributed amongst a growing base of shareholders. This section analyses the characteristics of the growing base of shareholders over time with reference to variables which indicate the distribution of shares – such as location, class and gender.

The Number of Shareholders and Average Holdings.

Data showing the increase in the number of shareholders and changes in average, median and modal shareholdings in each firm within the Thomas Duff & Co group are tabulated below.

Table 5.6: Shareholdings in the Thomas Duff group, 1874-1913.

Year	Company	Total shares	No of share-holders	Average holding	Median holding	Modal holding
1874	Samnuggur	12,120	19	622	250	200
	Titaghur	n/a	n/a	n/a	n/a	n/a
	Victoria	n/a	n/a	n/a	n/a	n/a
	Thomas Duff	n/a	n/a	n/a	n/a	n/a
1883	Samnuggur	15,000	43	368	100	20
	Titaghur	10,500	41	250	84	10
	Victoria	5,085	48	110	50	50
	Thomas Duff	2,000	7	286		
1897-1901	Samnuggur (1901)	20,000	222	95	35	10
	Titaghur (1897)	20,000	192	101	37	10
	Victoria (1899)	15,000	203	72	29	10
	Thomas Duff (1901)	4,610	14	329		
1913-1919	Samnuggur (1913)	28,962	303	96	30	20
	Titaghur (1919)	45,000	473	91	30	20
	Victoria (1919)	30,000	331	94	30	20
	Thomas Duff (1919)	4,910	13	378		

The Samnuggur Co's 1874 shares and Thomas Duff & Co shares were issued in £100 denominations and have been converted into £10 denominations for the purpose of comparability.

In terms of shareholdings, the key turning point for the three mill companies in the Thomas Duff group appears to have come at the time of the share issues at the turn of the century. There was a marked convergence of all three firms in terms of average, median and modal shareholdings, which remained stable in the period 1913-19, except that the modal shareholding increased from 10 to 20 as a result of the increase in capital. Average shareholdings had converged in the range 91-96 and median shareholdings were all 30. Titaghur's larger base of shareholders reflected the fact that this firm had issued 50% more ordinary capital by 1919 than the other two firms. Thomas Duff & Co, the managing agents, while taking the legal form of a private limited company, resembled the private partnerships that predominated amongst the Calcutta-based managing agents in its narrow shareholding base and limited capital.

Aggregated Shareholdings in the Thomas Duff Group over time.

The preceding analysis of shareholdings in the individual mill companies does not permit inferences to be drawn about the total value of shareholdings held because it neglects the dimension of shareholders having an interest in more than one of the companies, and also excludes holdings of preference shares. Exact data is unavailable to show the aggregated shareholdings across the three mill companies because of the different timings of new share issues at the turn of the century – in 1897 in the case of Titaghur, 1899 in the case of Victoria, and 1901 in the case of Samnuggur. Moreover, no list was provided in the minutes of the directors of Samnuggur Co for the new issue shares of 1919. However, the aggregate values are estimated in Table 5.7 below.

Table 5.7: Aggregated Shareholdings in Samnuggur, Titaghur, Victoria Cos, including Preference Shares.

	1883	**1901 estimate**	**1919 estimate**
Total shares	30,585	75,000	165,000
No of shareholders	87	449	513
Average shareholding	361	167	240
+Median shareholding	90	50	80

* The 1901 estimate aggregates the 1897 figure for Titaghur, the 1899 figure for Victoria and the 1901 figure for Samnuggur based on the reasonably realistic assumption that Titaghur and Victoria shareholdings were retained from 1897 and 1899 respectively up to 1901; 1919 estimate assumes Samnuggur and Titaghur shareholders were identical. +to nearest 10

The table demonstrates the convergence in the identity of the shareholders in the three companies. While the 1913-1919 figures for the individual companies give 1107 individual shareholders, once multiple shareholdings are accounted for, the shareholders in the three companies are estimated to comprise only 513 individuals. The convergence of shareholders in the Titaghur and Victoria Cos was demonstrated above and comparison of the 1897 and 1901 shareholders lists for Titaghur Co and Samnuggur Co indicates that the two firms' shares tended to be traded in tandem, which is confirmed by listings of individual share transfers in the minute books of the directors. Presumably, this convergence followed a similar logic to portfolio investments. Shareholders demonstrated confidence in the management of Thomas Duff & Co by taking a share in one of the three mill companies but insured their investment against an accident to any one of the mill companies affecting their capacity to pay dividends by spreading their shareholdings across the three companies.

Location

The detailed analysis of the initial shareholdings in the three mill companies in the Thomas Duff & Co group demonstrated an overwhelming preponderance of shareholders located in Dundee. Some other shareholders were located in Calcutta; these were mainly employees of the firm who were of Dundee origin themselves. The coincidence of the initial location of shareholders in the firm with the locus of managerial control was to be expected, given that shares were overwhelmingly in the hands of “insiders” initially. How did this change over time as the proportion of outsiders holding shares increased? Table 5.8 shows the geographical residence of shareholders in the Titaghur Co over time.

Table 5.8: Regional location of residence of Titaghur Co shareholders, 1883-1919:

	Number of shareholders			%		
Year of share issue	1883	1897	1919	1883	1897	1919
Total shareholders	41	189	453			
Dundee	28	88	221	68%	47%	49%
Edinburgh	0	1	28		1%	6%
Glasgow	0	7	23		4%	5%
Aberdeen	0	1	4		1%	1%
Rest of Scotland	0	1	11		1%	2%
London & Home Counties	1	6	54	2%	3%	12%
North of England	0	2	10		1%	2%
Rest of England	0	4	10		2%	2%
County Dublin	0	9	29		5%	6%
Rest of Ireland	0	15	23		8%	5%
Calcutta	12	24	25	29%	13%	6%
Other	0	0	3			1%
Unidentified	0	31	11		16%	2%

The table demonstrates that Dundee remained decisively the location where shareholders were resident throughout the period of study. Although shareholders resident in Dundee declined from 68% to 47% in the sub-period 1883-97, it rose slightly to 49% in the sub-period 1897-1919 when the number of shareholders was increasing more rapidly. Shares held by Calcutta residents declined as a proportion of the total in both sub-periods, probably indicating both that the Dundee directors did not actively seek a market for the shares in Calcutta and that Calcutta shareholders preferred to hold shares in rupee denominated jute mill companies.[11] Otherwise, a rising proportion of the shares were fairly evenly distributed across the most urbanised regions of the United Kingdom as more outsiders took shareholdings, with only London and the Home Counties taking more than a 10% share in 1919.

A similar picture emerges for the whole Thomas Duff & Co group of three mill companies, including the Victoria Co, in Table 5.9. In this case, data is presented for the regional location of individual shareholders, where data was available for a shareholder's residence at birth and death, and residence at the time of taking an initial shareholding in one of the companies. (The information given for individuals' residence at birth and death is irrespective of whether they were shareholders at that point in their lifecycle.)

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[11] Although the shares had a rupee listing from 1904, as recorded by the Calcutta business newspaper, *Capital*.

Table 5.9: Shareholder characteristics, residence by region, Samnuggur Co (1874, 1876, 1883, 1901, 1919), Titaghur Co (1883, 1888, 1895, 1897, 1919), Victoria Co (1883, 1898, 1919).

Sample size, N = 581	At birth	When became share-holder	At death	At birth	When became share-holder	At death
Regional Location	Number of individuals			%		
Dundee*	373	336	336	64%	58%	58%
Edinburgh	17	23	26	3%	4%	4%
Glasgow	24	23	22	4%	4%	4%
Aberdeen	14	8	8	2%	1%	1%
Rest of Scotland	16	7	10	3%	1%	2%
London & Home Counties	22	44	77	4%	8%	13%
North of England	11	12	17	2%	2%	3%
Rest of England	20	12	10	3%	2%	2%
County Dublin	31	29	38	5%	5%	7%
Rest of Ireland	34	32	14	6%	6%	2%
Calcutta	4	54	5	1%	9%	1%
Rest of India	5	0	1	1%	0%	0%
Other	10	1	7	2%	0%	1%
Total				**100%**	**100%**	**100%**

Only the Victoria Co and the 1919 share issue for Titaghur Co included addresses consistently. Where an address was missing, the residence of shareholders was determined by cross-referencing the information given in the firms' records with information in the *Dundee Directory*, newspaper obituaries and in the household census enumerators for Scotland, England & Wales, and Ireland.

This data reveals some additional features in relation to the changing location of shareholders over their lifecycle. A significant number of shareholders took up shares in the firms who had been born in Dundee but were no longer resident there. A large number of these were probably accounted for by the shareholders resident in Calcutta who were not born there. Most shareholders resident in Calcutta retired in the UK, many in Dundee, although some died in Calcutta prior to retirement. The other notable feature of the shareholders' lifecycle was the drift of a significant number of shareholders born elsewhere to reside in London and the Home Counties when they took up shares, and of a larger number to retire and die there. This pattern reflected the prosperity enjoyed by many of the shareholders. One other notable characteristic of the distribution of the shareholders that perhaps ran counter to general demographic trends in the United Kingdom was the concentration of a significant minority of shareholders in County Dublin – encompassing the city of Dublin and its environs – and in the rest of Ireland. These shareholders were predominantly either Quaker merchants and family members or part of the rentier class of absentee Protestant landowners who benefitted from their compradore relationship to the British imperial power in Ireland. In the absence of economic development in the domestic economy, Dundee jute mill shares appear to have composed part of their investment portfolio. At the heart of this network of Irish shareholders was the Goodbody family of merchants and stockbrokers, which also owned the Goodbody jute mill at Clashawan, in Clara, King's County (present day Offaly).[12]

It is also informative to examine more minutely some of the location-related characteristics and trends of the lifecycle of shareholders who were born or died in the Dundee region, or who were resident there when they became shareholders in one of the Thomas Duff & Co group's mill companies. These data encompass a sample of 417 shareholders who were resident in the region at some point in their lifecycle. The Dundee region has been subjectively defined to encompass those areas that were recognisably part of the regional economy during the period. By this definition, the Dundee region was bounded by Perth in the West, Cupar in Fife in the South, and Montrose and Brechin in Forfarshire (now Angus) in the North.

The Dundee urban area was itself experiencing rapid growth and transformation during the period in which the shareholders' location was sampled.[13] Lochee and Broughty Ferry were formally absorbed by the city during the period covered by the sample. Improved transportation links made Broughty Ferry, Monifieth and Carnoustie to the East, and Tayport/Newport/Forgan/Wormit on the south bank of the Tay, appealing residential areas to wealthy Dundonians removing their households from the urban squalor and pollution of the city, while continuing to commute to work there. The spatial dispersion of the regional textile industry between Dundee and the older towns and villages during the heyday of linen

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[12] Michael Goodbody, *The Goodbodys; Story of an Irish Quaker Family 1630-1950: Millers, Merchants and Manufacturers* (Dublin, 2011).

[13] B. P. Lenman, E. E. Gauldie and C. M. Lythe, *Dundee and Its Textile Industry, 1850-1914* (Dundee, 1969); William M. Walker, *Juteopolis: Dundee and Its Textile Workers, 1885-1923* (Edinburgh, 1979).

production gave way to a pattern of productive activity centred on Dundee and its immediate environs as the transition was made to jute production.[14]

Table 5.10: Shareholders located in Dundee Region at least one point in their lifecycle, Samnuggur Co (1874, 1876, 1883, 1901, 1919), Titaghur Co (1883, 1888, 1895, 1897, 1919), Victoria Co (1883, 1898, 1919).

Sample size, N = 417	At birth	When became share-holder	At death	At birth	When became share-holder	At death
Location	Number of individuals			%		
Dundee	218	216	135	52%	52%	32%
Lochee	7	2	2	2%	0%	0%
Broughty Ferry	12	23	65	3%	6%	16%
Monifieth	12	16	14	3%	4%	3%
Carnoustie	1	4	6	0%	1%	1%
Kirriemuir	7	6	6	2%	1%	1%
Forfar	10	8	7	2%	2%	2%
Brechin	4	3	2	1%	1%	0%
Arbroath	15	7	7	4%	2%	2%
Montrose	6	0	0	1%	0%	0%
Other Angus	20	10	21	5%	2%	5%
Angus [Forfarshire] Subtotal	**312**	**295**	**265**	**75%**	**71%**	**64%**
Tayport/Newport/Forgan/Wormit	8	16	27	2%	4%	6%
St Andrews	0	4	6	0%	1%	1%
Cupar	2	1	4	0%	0%	1%
Other Fife	11	4	8	3%	1%	2%
Fife Subtotal	**21**	**25**	**45**	**5%**	**6%**	**11%**
Alyth	6	5	8	1%	1%	2%
Blairgowrie	3	1	4	1%	0%	1%
Perth	6	3	2	1%	1%	0%
Other Perthshire	23	7	12	6%	2%	3%
Perthshire Subtotal	**38**	**16**	**26**	**9%**	**4%**	**6%**
Outside Dundee region	**45**	**81**	**81**	**11%**	**19%**	**19%**

The table demonstrates a number of features of the distribution of shareholders within the Dundee region. There was a net emigration away from the Dundee region during the lifecycle of the shareholders in the sample. While 11% who were not born in the Dundee region were subsequently resident there when they took an initial share in the mill companies or died there, 19% were resident or died outside the region. The city of Dundee – excluding Broughty

[14] *Dundee Directory*, annual, various years.

Ferry and Lochee which were absorbed into the city during the period of the sample – accounted for over half the shareholders with a connection to the region in terms of their place of birth or their residence when they first became a shareholder, but only a third of the shareholders classified by residence at death. The 20% decline in shareholders resident in the city at their death compared to when they became shareholders is largely accounted for by the migration of shareholders to the well heeled satellite towns around the city, Broughty Ferry, Monifieth and Carnoustie to the East, and Tayport/Newport/Forgan/Wormit on the opposite bank of the Tay in Fife, whose combined share increased 13%. The remaining shareholders in the region were dispersed across the older textile centres of Forfarshire and Perthshire and their share remained static throughout their lifecycle.

The Age Profile of Shareholders.

Taking the sample of 655 shareholders in the three mill companies for the shares issued between 1874 and 1919 for whom a year of birth and death could be determined, the distribution of shareholders by the decade of their birth is given in Table 5.11.

Table 5.11: Shareholders, decade of birth and average age at death.

Born	Average Age at Death	Sample (total = 655)
1820s	77.6	33
1830s	77.7	69
1840s	72.7	104
1850s	72.3	141
1860s	72.1	141
1870s	70.4	104
1880s	68.0	41
1890s	63.4	14

Of these 655 shareholders, 460 were men and 195 were women, or 70% men and 30% women. The overall average age at death was 72.4, 71.1 for men and 75.4 for women. This schema makes clear that the most common category of shareholder was a man born in the

1850s or 1860s who took a shareholding in the share issues at the turn of the century or in 1919 towards the end of their working life. The decline in the average age of death over time is presumably an artefact of the increasingly popular base of the shares and the participation of lower social classes with a lower life expectancy.

The Distribution of Shareholders by Social Class and Industry.

To examine the social position of shareholders in more detail – and changes in the class composition of the shareholders over time – two variables, wealth at death measured by the size of moveable estate recorded in inventories and occupation while a shareholder, are examined as indicators of social class. The wealth and occupational distribution of the mass of shareholders in all the firms is explored while the shareholders of individual firms are examined to look at change over time. In conjunction with the analysis of indicators of social class, the distribution of shareholders by industry is also considered in order to examine to what extent shareholdings were based on first-hand knowledge of the jute industry.

Of 411 inventories of moveable estate recorded for the mass of shareholders in the different issues of the three companies from 1874 to 1919, the average value of moveable estate was £46,490 in constant 1870 prices. The average recorded for 308 male shareholders was £57,123 and for 103 female shareholders £16,490. The median size of estate for the 411 shareholders was £17,462. The mode, measured in intervals of £0-1,000, £1,000-£5,000, £5,000-£10,000 and then intervals of £10,000, was £5,000-£10,000. The discrepancy between the overall average and the median and mode indicates a slightly skewed distribution of moveable wealth between a large minority of very wealthy shareholders and a slightly elongated tail of less wealthy shareholders.

Table 5.12 examines age at death of shareholders utilising a more truncated spectrum of wealth intervals.

Table 5.12: Distribution and Age at Death by Size of Moveable Estate, N = 379.

Moveable Estate	Age at Death	Sample (Total = 379)
£100,000 – £745,786	71.7	43
£50,000 - £100,000	73.6	59
£10,000 - £50,000	72.4	136
£5,000 - £10,000	70.8	60
£1,000 - £5,000	74.1	60
£0 - £1,000	74.1	21

According to this classification, one is struck by the concentration of shares in the hands of very wealthy individuals. The U-shaped age at death distribution reflects how social factors giving an advantage to wealthier individuals at one point in time were offset by an influx of less wealthy shareholders towards the end of the period sampled, when the life expectancy of all social classes had risen. The development of a more popular base of shareholders over time is indicated with more precision by examining the average moveable estate at death, grouped according to the year an individual shareholder was first recorded as holding shares in any of the three companies.

Table 5.13: Moveable Estate at Death ranked by year of first recorded shareholding in any of the three mill companies, Samnuggur, Titaghur and Victoria.

Mill company	Share issue	Moveable estate at death	Sample size
Samnuggur	1874-76	£62,261	15
Samnuggur	1883	£94,557	13
Victoria	1883	£82,714	19
Titaghur	1895-97	£31,293	22
Victoria	1898	£55,768	32
Samnuggur	1901	£64,057	92
Samnuggur	1913	£39,789	56
Titaghur	1919	£22,798	106
Victoria	1919	£31,800	21

From 1883, the overall downward trend is unmistakeable although the value recorded for the Titaghur Co in 1895-97 is an outlier. As the firms' equity expanded and their shares were held more widely, new shareholders tended to come from a lower social class as indicated by their moveable estate at death. An indication of the directors concern to market the firms' shares more widely to less wealthy individuals was given by changes in denominations of shares. The Samnuggur Co's shares were in denominations of £100 from 1874 to 1883. From 1883, the Samnuggur, Titaghur and Victoria Cos' shares were denominated at £10 but in practice were traded in blocks of 5 shares until the end of the nineteenth century. By 1919, individual £10 shares were being traded.

Gender and Occupation.

Before examining the occupational distribution of shareholders, the gender distribution is considered. Table 5.14 shows the increasing proportion of women who became shareholders in the Titaghur Co over time.

Table 5.14: Titaghur Co, 1883-1919, Male and Female Shareholders, (ordinary shares).

	No of shareholders			% of shareholders			Average holding			% of total value		
Year	1883	1897	1919	1883	1897	1919	1883	1897	1919	1883	1897	1919
Male	34	132	267	85%	69%	59%	295	119	100	98%	84%	69%
Female	6	58	185	15%	31%	41%	31	53	64	2%	16%	31%

There was a very rapid increase in the absolute and relative numbers of female shareholders. By 1919, two of every five shareholders were women. Moreover, Table 5.14 shows that as the average male shareholding declined sharply to a third of its 1883 value in 1919, the average female shareholding doubled, so that the average female shareholder held two thirds of the shares of the average male shareholder by 1919. In terms of the total value of shares held by non-institutional shareholders, the female share rose from 2% of the ordinary share capital in 1883 to 31% in 1919. The rising trend in female shareholdings appears to reflect an aspect of the broader trend in the widening of the mill companies' base of shareholders beyond individuals with a direct business relationship to the firms to a shareholding public interested purely in receiving a return on their investment. There may also have been more specific factors in operation, such as changes in the taxation of property income and death duties driving male shareholders to subdivide their holdings with relatives prior to the death of the male shareholder. A more gender-specific factor affecting female shareholders – whether related to a male shareholder or not - may have been that their class background was both wealthy and characterised by very low levels of employment and economic dependence on a male spouse or parent, leading households to seek a source of property income higher than could be achieved from a bank deposit account or government securities in order to give these women long term economic security.[15]

Taking all the shareholders identified listed in the share issues of the three mill companies from 1874 to 1919, of 1152 shareholders, 399, or 35%, were women. Of these, 216, over half, were part of the immediate family – a parent, a child, a spouse or a sibling - of a male shareholder in the firms. Only in a small minority of cases were these shares inherited by female relatives acting as executors of a male shareholder's will on his death. 183 had no identifiable family connection to a male shareholder, suggesting there was a large class of female shareholders in the market making investment decisions that were in some sense independent of a male head of household. Only 14 women could be identified as being in formal employment, eight of whom did not have a family connection with a male shareholder. There were six teachers, one university lecturer, one domestic nurse, one hospital nurse, one governess, two housekeepers, one farmer, and one shopkeeper's assistant. The average moveable estate at death of male shareholders was £57,123 compared to £16,490 for females.

[15] Claire Swan, 'Women Investors within the Scottish Investment Trust Movement of the 1870s', chapter in Anne Laurence, Josephine Maltby, Janette Rutterford (eds), *Women and Their Money 1700-1950: Essays on Women and Finance* (Abingdon, 2009), pp. 178-96.

Impressionistically, research of inventories to compile this data indicate that the wealth of female shareholders was either inherited from the division of the estate of a father or from a spouse, part of which might be invested in shares. Women shareholders who died before a spouse's death seldom left large estates. The averages for moveable estate at death therefore suggest an approximate alignment of male and female shareholders as coming from similar social backgrounds on average, despite the discrepancy in the values.

There is no record of a female shareholder attending an annual general meeting of any of the thee mill companies up to 1921. Women became significant shareholders in the Thomas Duff group of companies towards the end of the period when the shares became more actively traded. Their proportion relative to men by 1919 is not dissimilar to that for women investors in the Scottish American Investment Trusts of 1873-5, which were actively traded in Dundee.[16]

Based on biographical research, the data presented below in Table 5.16 for the occupation of Titaghur shareholders over time suggests that approximately 70% of female shareholders were dependants of male shareholders in both 1897 and 1919.

Industry and Occupation

Having considered the female component of the shareholders, it was concluded that their social position was overwhelmingly determined by their status as dependents of male heads of households, and that over half of these women were related to a male shareholder. The social position of the male shareholders can be examined in more detail by analysing their distribution by industry, or sector, and then by analysing their distribution by "grade" within each industry or sector.

Taking all male shareholders of the three mill companies in the share issues examined between 1874 and 1919, a sample of 523 male shareholders were identified for whom

[16] Swan, 'Women Investors', pp. 191-4.

industry or sector and an employment grade could be determined. The sample is disaggregated by industry or sector in Table 5.15.

Table 5.15: Male Shareholders in Mill Companies, 1874-1919, by industry or sector.

Industry or sector	No of share-holders	%*
Jute	212	40%
Non-jute	312	60%
Finance & trade	101	19%
Industry & manufacturing	36	7%
Food & drink processing	30	6%
Professional	90	16%
Retail services, skilled trades, small business	54	12%
Total identified	523	100%

*Excludes unidentified, as it is assumed that those shareholders whose industry or sector could not be identified were distributed across all categories. This probably gives a slight bias favouring the jute category, whose occupational status was easier to identify through their connection to Thomas Duff & Co.

Shareholders employed in the jute industry were predictably by far the largest category, comprising two in five shareholders. This category encompasses mercantile, manufacturing and related activities. 199 shareholders were employed in jute manufacture, marketing or a combination of both; 11 shareholders specialized in the manufacture of jute mill machinery, and one in mill furnishing. Records for 12 shareholders indicate that they were employed in the manufacture or marketing of flax-linen as well as jute. The boundary between those within the jute industry who specialized in jute manufacture or the marketing of the raw material and of finished jute goods is difficult to determine and was fluid over time. Many firms combined manufacturing and marketing activities. Some firms engaged in jute manufacturing while also trading extensively in raw jute or in finished goods on others' account. Some manufacturers largely delegated these activities. There was also an extensive network of jute merchants who were not manufacturers. 31 shareholders were engaged in manufacturing jute firms, 48 in mercantile jute firms, and 134 in firms engaged in both, (the latter category including many "inside" shareholders associated with mills managed by Thomas Duff). Given the imprecision of the underlying data, perhaps all that can be concluded is that there was no detectable trend for outside shareholders who were involved in the jute industry to be merchants or manufacturers.

95 of the shareholders in the jute category were 'from' Calcutta – they were employed there or had their main business interest there while a shareholder). The remaining 118 in the jute category were nearly all from the Dundee region. There were 57 "insider" shareholders in the Calcutta category. The insider shareholders in the jute category included 16 directors of Thomas Duff & Co and 28 employees, of whom 11 were commercial managers, 15 were mill managers, and two were mill assistants. Additionally, there was a group of nine former mill managers and engineers who were business associates of Thomas Duff from his time in Calcutta and four directors of Schoene, Kilburn & Co. This leaves 38 shareholders in the Calcutta category who were "outsiders". This includes eight Victoria directors, and 21 directors, two commercial managers and seven mill managers of other Calcutta jute managing agencies.

The non-jute categories comprised 311 – or three in five – shareholders. The largest category was finance and trade, with 101 shareholders, which corresponds more or less to contemporary classifications of the service sector.[17] This included shareholders working in

[17] The breakdown of the non-jute categories is as follows:-

"Finance & trade" = 101: 12 in banking (excluding bankers holding shares on behalf of their institutions), 2 in insurance, 4 in property, 16 in shipping services, 3 in stationary (including the wealthy Anglo-Irish businessman Charles Wisdom Hely, a character in Joyce's novel *Ulysses*), 10 stockbrokers, and 47 involved in trade, excluding jute. Of the 47 in trade, 18 were general merchants, 10 were in tea, 2 in each of rubber, tobacco, and wine, and 1 in each of oil, sugar, timber, typewriters and warehousing.

"Industry, manufacturing" = 36: 12 in engineering, 6 in chemicals, 5 shipbuilding, 3 textiles, 2 each steel, quarrying and needle manufacturing, 1 each boxmaking, soap, vulcanite.

"Food & drink processing" = 30: 7 brewers/distillers, 7 confectioners, 7 wholesale grocers involved in large scale retail, 3 flour manufacturers/millers, 3 agro-business and 2 tobacco manufacturers.

"Professional" = 90: 27 lawyers, 15 clergymen, 13 doctors, 13 state officials (of whom 2 members of parliament and 1 member of the house of lords), 8 military, 5 accountants, and 4 architects.

"Retail services, skilled trades, small business" = 54: 17 farmers, 7 builders or related trades, 6 grocers, 5 bakers, 3 horticulture, 2 each journalists, photographers, chemists, 1 each clothing, coppersmith, bookbinder, drysalter, jeweller, sawmiller, tanner, watchmaker.

fields that serviced the jute industry or purchased its output, such as bankers, stockbrokers, shipping and general merchants. The next largest category consisted of the professions, divided between those such as lawyers, accountants and architects who serviced the jute industry, and unrelated professions such as teachers and clergymen.

Those in the non-jute category were overwhelmingly "outsiders", 279, compared to 32 "insiders" in non-jute occupations. Insiders included associates of the Thomas Duff directors such as their lawyers in the Hendry family firm, and the tea merchant firm of Matthewson, related by marriage to the director George Nairn.

Change over Time.

How did the composition of shareholders change over time? The shareholders of Titaghur are compared for the years 1883, 1897 and 1919.

Table 5.16: Titaghur Co, Distribution of Male Shareholders by Industry/Sector, 1883-1919.

	No			%		
Industry	**1883**	**1897**	**1919**	**1883**	**1897**	**1919**
Jute	25	61	85	74%	52%	36%
Food & drink processing	2	6	17	6%	5%	7%
Finance & trade	3	22	45	9%	19%	19%
Industry, manufacturing	0	8	17	0%	7%	7%
Retail services, skilled trades, small business	2	8	34	6%	7%	15%
Professional	2	12	36	6%	10%	15%
Men, total identified	**34**	**117**	**234**	**100%**	**100%**	**100%**
Others						
Men, unidentified	1	28	71			
Institutional	0	3	13			
Employed women	0	4	13			
Women dependants of shareholders	3	32	106			
Women dependants of non-shareholders	2	9	31			
Total	**40**	**193**	**468**			

The table shows the qualitative change in the ownership of the company between 1883, when the shareholders were overwhelmingly employed in the jute industry, and 1897, when they declined to half. The decline in the proportion of shares held by those employed in the jute sector reflected investors from other industries taking up new shares, the increase being distributed fairly evenly across different categories. These trends continued in the sub-period 1897-1919.

While sector or industry serves as an indicator of social position for categories such as small businesses and professionals, it cannot do so for larger, hierarchical categories of employment. By collating biographical information for job titles to construct a employment “grade” variable, occupational position can be analysed more closely for male shareholders. Table 5.17 takes the mass of shareholders in the three mill companies, listing “grades” in descending order by class position. Where a shareholder experienced mobility between grades between the share issues covered by the sample, the grade assigned was the one at which they spent the longest duration during the period covered.

Table 5.17: Male Shareholders in Mill Companies, 1874-1919, by employment “grade”.

Grade	**Sample, N = 742**	**%***
Director/partner	275	53%
Professional	81	15%
Small proprietor	53	10%
Manager	36	7%
Clerk/broker/agent	27	5%
Supervisory/technical	51	10%
Unidentified	219	

*Excludes unidentified.

Directors and partners of large firms at the apex of the class structure dominate the sample. Professionals and small proprietors were represented as already indicated in the analysis of industry or sector. The shares of managers, clerks/brokers/agents and supervisory/technical grades may have been overrepresented relative to their weight in the wider shareholding public, reflecting the use of shareholdings as a means to incentivise the performance of employees and transactors with the mill companies. The general manager in Calcutta, his commercial assistants, and mill managers and supervisors would have placed in each of these categories respectively.[18]

Table 5.18 examines the changing grade composition of the shareholders over time.

Table 5.18: Titaghur Co, Shareholders' Employment "Grade", 1883-1919.

	Shareholders			%*		
	1883	1897	1919	1883	1897	1919
Total	39	181	467			
Men with identified grade	35	145	305	100%	100%	100%
Director/partner	24	80	123	70%	68%	53%
Professional	2	12	36	6%	10%	15%
Small proprietor	1	4	29	3%	3%	12%
Manager	1	5	13	3%	4%	6%
Clerk/broker/agent	0	4	8	0%	3%	3%
Supervisory/technical	6	12	24	18%	10%	10%
Men, unidentified	1	28	71			
Institutional	0	3	13			
Employed women	0	4	13			
Women no occupation given	5	29	137			

*Excludes unidentified males, institutional shareholders, and women.

The table replicates the dominance of directors or partners of firms from the previous table and shows that this was eroded only slowly, remaining stable from 1883 to 1897, despite the qualitative increase in outside shareholders over this period. Between 1897 and 1919 the proportion of shares held by intermediate categories dominated by outsiders – professionals, small proprietors and managers – accelerated. On the other hand, while they increased in absolute terms, the share of the lower social categories dominated by those employed in the jute industry - clerks and supervisors - remained static.

[18] The decision to classify mill managers in the supervisory/technical category rather than the manager category is arbitrary and subjective but serves to highlight the distinctive group of shareholders who were managers of jute mills and had been promoted from a supervisory grade.

A Note on Institutional Shareholdings

As the previous table illustrated, institutional shareholders had emerged by 1897 and grown to 13 by 1919 – including the managing agents themselves, Thomas Duff & Co, which took 200 shares of the 1919 issue. Table 5.19 shows the proportion of shares held by institutions in the mill companies.

Table 5.19: Institutional Shareholdings, 1895-1919.

Share Issue	Institutional holdings	Total shares issued	%
Titaghur, 1895	1088	20000	5.4%
Titaghur, 1897	517	20000	2.6%
Victoria, 1899	2173	15000	14.5%
Samnuggur, 1901	845	20000	4.2%
Samnuggur, 1913	4056	28962	14.0%
Titaghur, 1919	4146	45000	9.2%
Victoria, 1919	4205	30000	14.0%

The table indicates a fluctuating but rising trend in institutional shareholdings. However, institutional shareholdings consisted of two different types, with different motivations. The first were holdings by banks, which were not made with the primary purpose of making an investment return. Records of share transfers clearly indicate that banks took shares in trust as collateral from individual shareholders seeking loans.[19] Bank holdings tended to be liquidated after a period of time, suggesting the end of the loan agreement with the shareholder concerned. These type of holdings were by far the most common institutional shareholding, suggesting that the mill companies' shares were considered creditworthy and low risk by the banks. Of a selection of 401 observed share transfers recorded in the minutes of the directors

[19] MS 86/1/1, Samnuggur Co; MS 86/2/1, Victoria Co; MS 86/3/1, Titaghur Co, all MOTD.

of the Samnuggur Co and Titaghur Co from 1874 to 1921, 46 transactions involved a bank making a sale, and 51 involved a bank making a purchase.[20]

Table 5.20: Institutional Shareholdings, Banks, 1895-1919.

Share Issue	Bank holdings	Total shares issued	%
Titaghur, 1895	1088	20000	5.4%
Titaghur, 1897	517	20000	2.6%
Victoria, 1899	2173	15000	14.5%
Samnuggur, 1901	845	20000	4.2%
Samnuggur, 1913	3021	28962	10.4%
Titaghur, 1919	3621	45000	8.0%
Victoria, 1919	4100	30000	13.7%

The other form of institutional shareholding took the form of holdings taken by investment trusts.

Table 5.21: Institutional Shareholdings, Investment Trusts, 1895-1919.

Share Issue	Investment Trust holdings	Total shares issued	%
Samnuggur, 1913	1035	28962	3.6%
Titaghur, 1919	525	45000	1.2%
Victoria, 1919	105	30000	0.4%

The six investments trusts represented in the sample were the Edinburgh & Dundee Investment Trust, The Second Edinburgh & Dundee Investment Trust Ltd, The Third Edinburgh & Dundee Investment Trust Ltd, Edinburgh, Aberdeen & Dundee Investment Co Ltd, The Scottish Mortgage & Trust Co Ltd and The Scottish Northern Investment Trust Ltd. By far the most significant holdings were those of the Edinburgh Investment Trusts in the Samnuggur share issue of 1913. Charles Barrie Ovenstone, a director of Thomas Duff & Co, had also

[20] MS 86/1/1/1-18, Samnuggur Co, MOTD, 1874-1921; MS 86/3/1/1-17, Titaghur Co, MOTD, 1883-1921. Share transfers were selectively sampled. Larger transfers and transfers involving institutions were over-sampled relative to other kinds of transfer, so the information given is biased but does accurately reflect the close correlation of bank sales and purchases of shares.

became a director of the Edinburgh & Dundee Investment Trusts by the time of his death in 1931, but it is not clear if he held the position in 1913.[21]

Retention of Shares, Share Turnover and Velocity of Share Transfers.

This study of the shareholders of the Thomas Duff & Co group mill companies has emphasized the development of a much wider base of shareholders over time as the firms issued more equity to finance expansion. However, the variables examined so far give little indication about how actively traded the shares were. Chapter 2 considered evidence of how the shares of the rupee mill companies in Calcutta were actively traded. Did the wider base of shareholdings of the Dundee firms correspond to the development of an active market for Sterling jute mill companies?

The most direct evidence of trading in shares in the mill companies comes from the minute books of the directors of the Samnuggur Co and the Titaghur Co, which appear to have recorded all share transfers. As mentioned above, the directors took a close interest in share transfers over which the firms' articles of association gave them extensive discretion. The records of share transfers were extensively but selectively sampled, with comprehensive coverage for the earlier years to 1900, and a focus on larger transfers of 50 shares or more thereafter [MH sampling query]. Impressionistically, the observations sampled probably represent well over half of all transfers. Table 5.21 gives an indication of transfers of ordinary shares in the Titaghur Co. Transfers were defined as "market" transactions if they were not between family members, although the minute books do not state clearly whether transfers were arranged directly between individuals, through the offices of the directors themselves, or through a broker on the Dundee stock exchange.

[21] "Dundee Business Man's Death", *Scotsman*, p. 11, 31 Jan 1931.

Table 5.21: Samnuggur Co, share transfers as % of total shares, annual averages, 1884-1920.

Years	"Market" transactions	*All transactions	Market	Sample
1884-89	2.3%	3.5%	69%	30
1890s	4.4%	7.8%	60%	71
1900s	3.1%	3.6%	91%	41
1910s	1.6%	2.3%	73%	46
1884-1920	**2.9%**	**4.3%**	**74%**	**188**

Bearing in mind the limitations of the sample, the data recorded for transfers of Samnuggur ordinary shares does suggest that the shares were sparsely traded throughout the period. "Market" transactions between non-family members predominated but fell to 60% of share transfers during the decade of the 1890s when a number of directors died and passed on large shareholdings to family members.[22]

The sparse trading of shares does suggest a greater degree of long-term commitment by shareholders in the Dundee mills to seek a return on their investment through dividends and a lesser degree of speculative churning in the pursuit of capital gains than was common in Calcutta. This impression is confirmed by examining the retention of shares by holders of Titaghur shares at the time of the 1897 share issue. The level of retention can be examined by comparing the 1897 shareholder list with the list of shareholders prior to the new issue shares of 1919.

The 1897 share issue raised the ordinary share capital to £300,000, called up incrementally up to 1905.[23] Of 229 shareholders in the Titaghur Co at the time of the 1897 share issue, 70 were deceased by the time of the new share issue of 1919. The executors of two deceased shareholders increased their shareholding while nine executors decreased their shareholdings. The executors of eight deceased, large shareholders transferred shares to 30 other family

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[22] Impressionistically, Titaghur followed the same long term pattern, given the dual trading in the two firms' shares, although the timing of share issues may have created a short term discrepancy. Further research into the minutes of the directors, cross-referenced with the records of transactions recorded on the Dundee Stock Exchange would be required to determine how actively the shares were traded with a greater degree of precision.

[23] MS 86/3/1/9, Titaghur Co, MOTD, p. 418, 3 Jan 1905.

members but also sold a net balance of shares, amounting to 12% of the ordinary share capital. The executors of 51 deceased shareholders sold out their shareholdings altogether, 31% of the value of the ordinary share capital. A further 70 shareholders sold out their shares, amounting to 4%. 44 shareholders reduced their shareholding, also 16%. In all, 182 shareholders sold shares equivalent to 63% of the ordinary share capital.

21 shareholders increased their shareholding, 9% of the share capital. The remaining 55% of the sold share capital had been acquired by 400 new shareholders by 1919. 17 of the new shareholders were institutional. 108 of the new shareholders were connected to a family shareholding; they took up 27% of the ordinary share capital. 275 were new shareholders with no family connection, taking up 28% of the ordinary share capital.

The cumulative 66% turnover in the period 1897-1919 is of the same order of magnitude as the selected observations for share transfers in the directors' minutes for Titaghur Co for the same period. If it is assumed that the selective sample of share transfers in Table 5.21 captured a third of the total value of share transfers during this period, this would amount to total transfers valued at £341,400, or 114% of the ordinary share capital. Based on this assumption, this would suggest that the 66% of the share capital sold changed hands twice during this period, or an annual velocity of share transfers of about 5% of the ordinary share capital.

Conclusion.

The managing agents proved capable practitioners of a strategy of gaining access to capital markets to finance expansion through widening share ownership. As shown in Chapter 2, dividend payments were competitive relative to the average Calcutta managing agents of jute mills and compared favourably to most alternative investment opportunities in Dundee, on a scale comparable to more exclusive companies with superior dividend performance, such as the Alliance Trust.[24] Therefore, Thomas Duff & Co were able to avoid shareholder discontent. The evidence suggests that shareholders were loyal and had a long-term commitment to holding the companies' shares and remained passive recipients of dividends throughout. Scott was unable to appeal to shareholder activism to challenge the direction of the board in 1900 and was ousted. The managing agents were able to expand the mill companies to ensure an increasing income stream of rents generated from the managed companies.

[24] Munn, *Investing for Generations,* Introduction.

Conclusion.

This thesis has examined the history of Thomas Duff & Co and its influential role in the Calcutta jute industry. This history demonstrates that managing agents like Thomas Duff & Co with operational control of jute manufacturing companies in Calcutta possessed a competitive advantage that was translated into lucrative rents. Thomas Duff & Co confirms the evidence in the secondary literature of the role for this form of managerial hierarchy under the historically specific conditions of a colonial context in which markets functioned in India and in their relationship to world economy in the age of the 'imperialism of free trade'.

In the introduction, some of the macro-level questions in the historiography of British colonialism were referred to in order to frame the context in which the jute industry there developed, particularly the impact on colonial India's economic development of the relationship to world trade imposed on it by British political rule and the related question of colonialism's contribution to industrial development. While the research presented in the preceding chapters has not been concerned primarily to address such macro-level questions, some of the findings are suggestive. It is not in doubt that the jute industry's rapid growth in Calcutta made a significant contribution to export earnings and to creating urban industrial employment in a sector that was far more productive than traditional agriculture. However, many historians have demonstrated the negative effects of agrarian Bengal's reliance on jute as a cash crop and the asymmetrical power relationships in the extension of credit to the peasantry by intermediaries in the jute value chain, leading to long run changes in the security of land tenure to the detriment of the peasantry.[1] Bagchi has emphasized the enclave nature of the development of jute manufacturing and the limited linkage effects.[2] If one concentrates

[1] Goswami, *Industry, Trade & Peasant Society*; Bose, *Peasant Labour and Colonial Capital.*
[2] Bagchi, *Private Investment in India*.

on the urban industrial sector that is the subject of this study, the positive contribution of British investment in the industry is questionable. Even in the most favourable case of Thomas Duff & Co, the largest jute manufacturer which raised most of its share capital in the United Kingdom for investment in Calcutta, it is doubtful whether there was a net flow of funds into India in the period 1870-1921. 33% of the initial capital of the Samnuggur Co floated in the 1870s was that of Thomas Duff himself, which had been earned during his period of stewardship of the Borneo Co's Barnagore mill in the 1860s. The other shareholders were repaid their initial investment and and that required for subsequent share issues many times over by the flow of dividend payments back to the United Kingdom, while the share of the direct producers, the peasants who produced the raw jute, and the workers who manufactured it, remained pitiful.

Chapter 1 presented a quantitative study of the development of the jute industry in Calcutta from 1870 to 1921. There was limited technical change in the industry over time and limited scope to innovate and to capture internal economies of scale. This growth was extensive, driven by the application of more factors of production, rather than a qualitative improvement in productivity or product- and process- innovation. The dominance of raw jute in the cost structure proved to be the crucial input affecting industry performance. This entailed a strategic imperative to buy jute cheaply at the right point in the seasonal cycle, leading to rising jute stocks held by the industry over time, which necessitated access to sources of credit to finance working capital.

There was a long term trend for profits to decline, mirrored by a narrowing of the equity base on which shareholders could earn high dividends. The evidence presented is consistent with the hypothesis that the formation of the Indian Jute Mills Association in the 1880s and the use of short-time working to limit output in periods of depressed demand was successful at managing competitive pressures in the industry, while storing up the seeds of crisis in the inter-war period.

Chapter 2 extended the analysis to make a quantitative assessment of the variations in the performance of different firms within the industry, taking the managing agent as the basic unit of analysis. It demonstrated that there were significant variations in performance of the mill companies under different managing agents over time. Thomas Duff & Co was one of the 'big four' managing agents to expand rapidly and increase market share. While the technical barriers to entry in the industry were low, it was demonstrated that there was limited entry by new managing agents during the period, suggesting significant barriers to entry in terms of access to the information and other forms of competitive advantage internalized by those managing agents which survived. The managing agents who survived converged on a range of performance which allowed most to remain profitable. The variation in performance showed that the mills managed by Thomas Duff & Co were some of the most profitable during this period. There were significant differences in the performance of managing agents based in Calcutta who managed Rupee companies, and those based in the UK who managed Sterling companies. The Rupee companies were more susceptible to competitive pressures than the Sterling companies in general because of their relationship to the discipline of capital markets and tended to perform better over time, while the excessive rents charged by some of the managing agents of Sterling mills had a deleterious effect on firm performance. Thomas Duff & Co, one of the managing agents of Sterling mill companies, was an exception.

The quantitative evidence of industry- and firm-level performance poses questions about the nature of the competitive advantage that firms internalized which were assessed by the case study of Thomas Duff & Co. Thomas Duff & Co were atypical of the managing agents operating in the Calcutta jute industry in some ways. The atypical nature of Thomas Duff & Co permitted inferences to be drawn about the functioning of the managing agency system. Its relatively transparent accounts as a private limited company rather than a partnership and its specialism in jute allowed the scale of rents derived from the jute industry to be isolated and studied.

Chapter 3 studied the evolution of Thomas Duff & Co within the framework of principal-agent theory. The use of the public limited company form allowed the directors of the Samnuggur Co to pool location-specific knowledge from both Dundee and Calcutta and to internalize their collective competitive advantage, while solving principal-agent problems to establish an effective multinational management structure. A functional managerial hierarchy that was capable of adapting to change and reproducing competitive advantage emerged through the creation of a career path promoting Calcutta managers to the directorate in Dundee. The plc form did not dissolve the importance of family networks in the operation of Thomas Duff & Co and its managed firms. Rather, the resources of various family networks – in the form of knowledge and equity - were reinforced and protected through marriage. The firm succeeded in creating a virtuous circle of profitability of the managed firms that permitted the maintenance of high returns to ordinary shareholders, rapid growth of productive capacity while permitting the extraction of very significant rents.

Chapter 4 showed how Thomas Duff & Co actively shaped the business environment in which they operated by anticipating and neutralising threats to their control of the directorate, intervening in the supply chain to manage costs and cajoling other managing agents to cooperate to manage competition. There were several episodes of internal dissent within the directorate over access to managing agency rents. They were successfully resisted before they threatened to call the whole structure into question through unwanted attention in the eyes of the media and the law courts – and by extension – the ordinary 'outsider' shareholders.

An external market threat in the form of rising jute prices was dealt with by an informal process of backwards integration which allowed it to capture the directors of the raw jute trading firm of R Sim & Co, limiting the risks associated with fluctuating prices. In this case, Thomas Duff & Co were able to leverage their market power while using family networks, (through appointment of sons of the Thomas Duff & Co directors as managers of R Sim & Co), to ensure privileged access to the raw material.

In relation to managing horizontal competition, Thomas Duff & Co was able to bring its distinctive competitive advantage as a jute specialist to bear in playing a disproportionately prominent role in the affairs of the Indian Jute Mills Association. They played a significant role in advocating short-time agreements and periodic restrictions on investment in new capacity that enabled the industry to consolidate from the late-1880s. Although this entailed short-term costs to the firm in terms of sacrificing its competitive lead in certain destination markets, it served its long-term strategy of managing the effects of competition as a relatively small firm without the financial resources to weather crisis of some of its more diversified competitors.

In the final chapter, it was shown how Thomas Duff & Co engaged in a process of learning about the functioning of relatively competitive capital markets in Calcutta. This knowledge was transferred to Dundee, where they pioneered the controlled expansion of the equity base of the managed companies to take on a more popular character – encompassing professionals, petit bourgeois and their own skilled employees. This permitted the managing agents to raise investment funds on a sufficient scale to finance the rapid expansion of the jute companies they managed, while retaining sufficient stakes themselves to maintain control and maintain access to lucrative managing agency rents.

The case of Thomas Duff & Co enhances our understanding of the evolution of free standing companies into multinational managing agents. It was an example of strategic control from overseas of unusual longevity that endured until its conversion to a rupee company in the 1950s, bucking the inter-war trend for these firms to disappear under changed circumstances.[3] This case suggests fruitful avenues for future research would include the comparative study of Thomas Duff & Co and other Calcutta-based managing agents, such as Bird & Co, Andrew Yule

[3] Mira Wilkins, "The Free-Standing Company, 1870-1914: An Important Type of Foreign Direct Investment", *The Economic History Review*, Vol. 41, No. 2, (May, 1988), pp. 259-282; Mira Wilkins and Harm Schroter, *The Free-Standing Company in the World Economy 1830-1996* (Oxford, 1998); Geoffrey Jones, *Merchants to Multinationals: British Trading Companies in the Nineteenth and Twentieth Centuries* (Oxford, 2000); Mark Casson, 'Institutional diversity in overseas enterprise; explaining the free-standing company', *Business History*, 36.4, pp. 95–108, 1994.

& Co, and Jardine, Henderson. It is instructive that Thomas Duff & Co's general manager in Calcutta, Sir Alexander R Murray, was recruited to direct the affairs of Jardine, Henderson in 1921 before returning to the directorate of Thomas Duff & Co after his retirement to the UK in the 1930s.

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Appendix: Notes on sources and quantitative methods employed in Chapters 2-3.

This appendix makes some observations about the use of deflators in Chapters 1 and 2 before detailing methods of estimation in specific tables. Most of the variables presented in Chapters 1 and 2 are utilized to demonstrate long-term trends but the scope to analyse relationships between the variables was limited. The appendix concludes with some general remarks about some of the issues with processing the data to permit further research that analyses the nature of the relationships between the variables presented in Chapters 1 and 2 more closely.

Per Loom Measures

All per loom measures in this chapter derive from a comprehensive table of sacking, hessian and total looms for the industry and for individual mills collated from primary sources. Sacking, hessian and total loom figures for individual firms from Anon., *Jute Mills in Bengal*, (Dundee, 1880), p. 88; D. R. Wallace, *The Romance of Jute*, (Calcutta, 2nd edition, 1928); annual series 'Jute Mills in India' giving breakdown of sacking and hessian looms published by Calcutta firms of jute brokers, Poppe, Delius & Co 1895-99, continued by JA Dykes & Co 1900-09, Moran & Co, 1910-21, reproduced in *Dundee Advertiser*, 1895-1905, Indian Jute Mills Association, annual *Report of the Committee* 1905-21. Figures for individual firms 1870-95 from company annual reports published in *Friend of India & Statesman*, 1879-83, *Dundee Courier* and *Dundee Advertiser*, 1879-95. The availability of firm-level data for total looms is more comprehensive than for hessian and sacking looms. Combined with figures for start and end years bookending discontinuities in the figures, missing data for the ratio of sacking to hessian looms for the period 1870-95 can be extrapolated in nearly all cases, or are estimated as continuous where the total loom figure is unchanged.

Deflators (especially Figures 1.4-1.6.)

In order to explore trends in real terms over time, variables have been expressed in constant 1873 prices where appropriate. To calculate deflators, I have used the price index from "weighted index of all commodity prices, 1861-1931", Government of India, Department of Commercial Intelligence and Statistics, Index Numbers of Indian Prices (Delhi, 1933), third issue, cited in Michelle McAlpin, "Price Movements and Economic Fluctuations", in Desai, M & Kumar, D (eds), *Cambridge Economic History of India, Volume 2, 1757-1970*, (Cambridge, 1983), pp. 903-4. [For the equivalent calculations of deflators in sterling in Chapters 3-4, I have used the price index "Board of Trade Wholesale Price Indices 1871-1980", from B.R. Mitchell, *British Historical Statistics* (Cambridge, 3rd ed, 1988), pp 728-9.]

There are obvious limitations to using a general price index to deflate prices to develop a more precise analysis about the relationships of variables. This is demonstrated by considering the relative movement of prices if McAlpin's price index is harmonised for comparison with Bagchi's estimates for the price of jute textile machinery from 1900:

Year	Bagchi, Index nos. Of prices of textile machinery exported from UK to Bengal 1904 = 100	McAlpin's general price index adjusted 1904 = 100
1904-05	100	100
1905-06	99	112
1906-07	100	131
1907-08	106	138
1908-09	109	148
1909-10	112	132
1910-11	126	124
1911-12	125	128
1912-13	112	144
1913-14	105	150
1914-15	101	155
1915-16	118	150
1916-17	152	153
1917-18	188	154
1918-19	186	178
1919-20	251	249
1920-21	302	250
1921-22	321	226

Source: "Table 8.1. An approximate measure of gross fixed investment in the jute industry in Bengal, 1905-6 to 1938-39", Bagchi, Private Investment in India, pp. 273-4.

Jute textile machinery prices lagged behind the general price index from 1906-07 to 1915-16, then leapt ahead in 1917-18 and in 1920-22. For the purpose of measuring the real value of fixed investment in the jute industry, it would be preferable to use Bagchi's price series. Similar considerations would apply to deflating the value of raw material inputs utilizing the various raw jute price indices discussed below. These could be used to calculate alternative estimates to the ones based on McAlpin's index in **Table 1.5** and in **Figures 1.7-1.9**

Data for the minority of jute mill firms which were Sterling companies owned or headquartered in the UK are expressed in rupees at the company accounting exchange rate for any given year for the purpose of comparison. As most data measured in sterling in firms' published accounts were simply expressing values for inputs and outputs purchased in India, this is unproblematic, but where values for inputs purchased or for capital invested in the UK were affected by the 50% depreciation of the rupee between 1885 and 1898, this has the effect of inflating the values of the stock measures of the Sterling companies such as investment in fixed capital. This introduces a bias into some industry calculations based on aggregated firm data in Chapter 1 and for some inter-firm comparisons in Chapter 2. For instance, profitability measured as a percentage return on capital employed in **Tables 1.7 - 1.8** and **Figure 1.14** is underestimated for the Sterling companies for this reason.

Capital employed per worker, labour productivity and wages (Table 1.2)

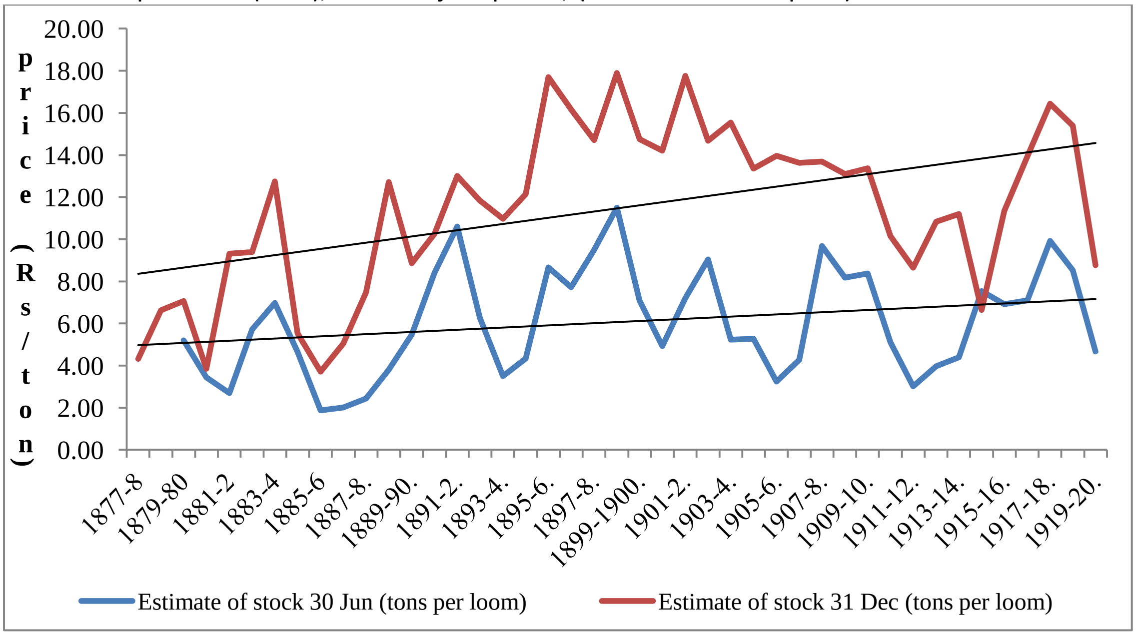
While physical capital employed per worker is given in **Table 1.2**, further research is required to assess whether Government of India figures for total workers employed in the industry were reliable and consistent and how to cross-reference this data with firm-level data to calculate productivity. Firm-level data for wages is extremely scarce. For instance, Ranajit Das Gupta, *Labour and Working Class in Eastern India: Studies in colonial history*, (Calcutta, 1994), points out the way in which official figures consistently understated the number of casual 'daily' workers employed in the jute mills until inter-war changes in regulation led to a formalising of labour relations in the industry.

Value of jute stocks per loom (Figure 1.8)

The estimates of the values in Figure 1.8 take into account that some mill companies changed the months in which they reported their accounts, especially towards the end of the period, and so dropped out of the estimate. In a few cases, missing values for individual companies and for the minority of companies reporting in other months were estimated by taking the average reported value.

Using the Government of India price series for maximum annual prices of the first assortment of jute to come on the market in a given season, it is possible to show that the volume of jute stock per loom increased as well as the value, providing further evidence of more strategic behaviour by firms to manage costs over time. This conclusion is based on the assumption that this trend was unlikely to have been sustained if firm behaviour wasn't minimally rational and that an alternative explanation based on firms' incompetence in raw materials purchases across the industry is implausible.

Jute stocks per loom (tons), and raw jute prices, (constant 1873 rupees).



Sources: As in Figure 1.8; Government of India, Statistical Abstract of British India, "Jute, Bengal, first assortment (average of maximum prices)."; GH Le Maistre, Investors India Year Book, 1920 (Calcutta, 1921), p. 114, "Area under Jute, Outturn and Prices, 1900-19. Average price per 400 lbs of Naraingunge jute."

Working Capital (Table 1.6, Figures 1.10 – 1.12.)

The data used takes end-of-year accounts running from September to March, with most accounts closing in December, and assumes that this presents a reasonable approximation to the result for all firms in December because any seasonal biases of firms reporting before December should be balanced by a similar number of firms reporting after December. This seems a reasonable assumption as the results for average jute stocks of firms reporting in December are not significantly different for the average of all firms in all months.

Profitability (Table 1.8, Figures 1.13 – 1.14)

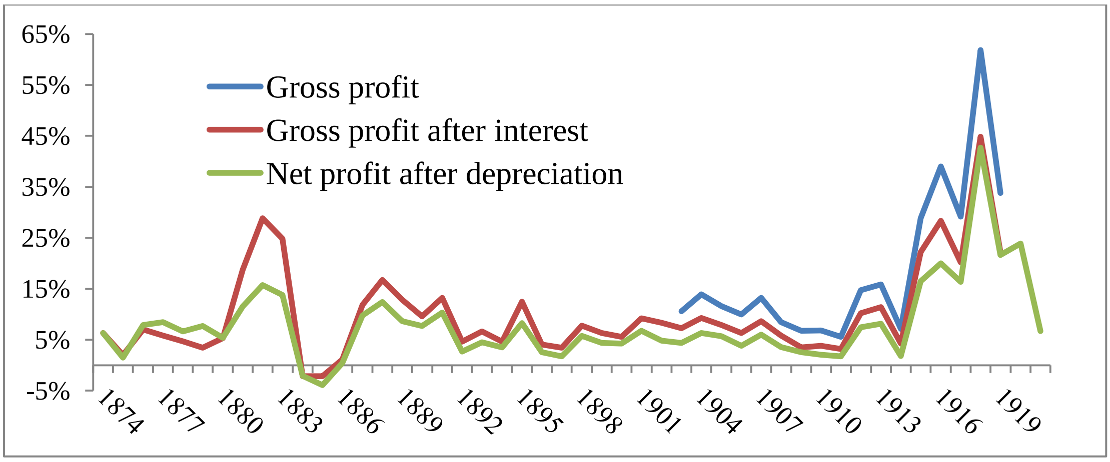
An alternative measure of profitability in the industry is take the real returns, in constant prices, of profits relative to investment in fixed capital. Three alternative measures are possible – gross profits after interest in constant prices relative to gross expenditure on fixed capital, to net expenditure on fixed capital after accounting for depreciation (the replacement value of capital employed), or to the latter measure including reserve funds. To calculate real returns, requires considering the returns relative to the real value of investment in fixed capital in a previous time period. For all three measures, I have calculated the "real" values by summing the incremental increases in the value of fixed capital in constant prices for a given year in which the capital was added to.

Due to changes in the method of stating annual accounts by the rupee jute mills, consistent figures are available for the latter measure – net expenditure on fixed capital including reserve funds. The figures for net expenditure on fixed capital excluding reserve funds are less reliable as some firms didn't clearly distinguish between reserve funds and depreciation funds while some did. Figures for gross expenditure on fixed capital become obscure from the late 1890s until 1912, as many firms ceased to publish this figure in their accounts because they were concerned to emphasize that the replacement value of their fixed capital after accounting for funds set aside for depreciation would compare favourably with newer firms entering the industry in order to retain the confidence of their shareholders. I have estimated gross expenditure on fixed capital by extrapolating from the available data in the annual accounts for sums added to depreciation. However, this cannot account for sums spent on repairs and replacements or for arbitrary transfers that occurred out of the depreciation account. Unfortunately, the more reliable figure - net expenditure on fixed capital after depreciation, including reserve funds – produces the most unsatisfactory results. As mills had to defer investing in new capacity and repairs and replacements during the war, they set aside very large sums to depreciation and reserves in preparation for renewed investment after the war.

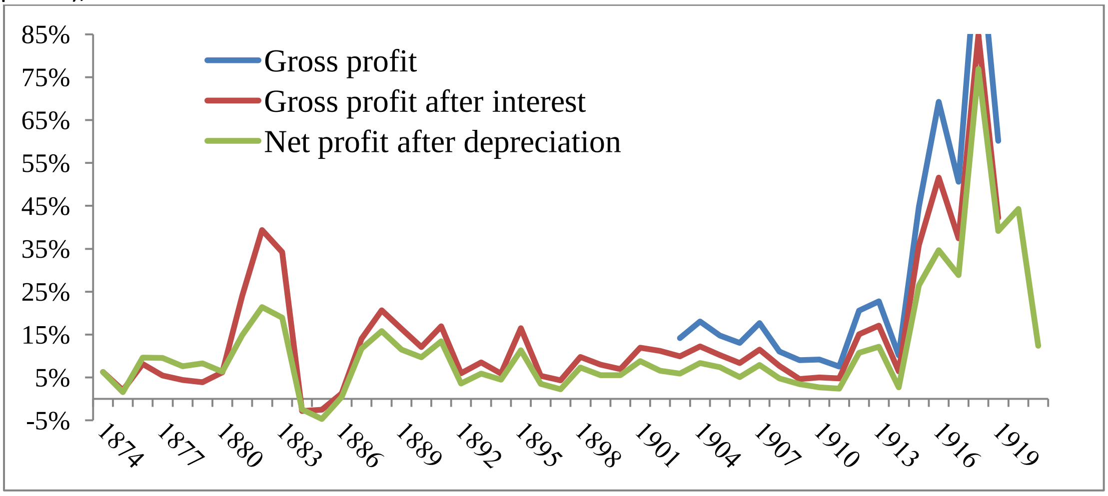
This had the effect that the cost of capital for many firms by the end of the war was either negligible or negative. As the denominator for calculating profits relative to capital employed, this produces unintelligible results for calculating any long term trend.

Gross profits after interest were compared by prospective investors with two alternative measures of profitability, “gross profits” and “net profits after depreciation” (**Table 1.8**). Gross profits provide the best measure of productive efficiency [MK: why?] within the industry by comparing the cost of physical inputs and revenue earned from sales by individual firms. Gross profits after interest were measured to take into account the additional cost of external short term finance which was often resorted to by firms borrowing from their managing agents or from banks to use as working capital to cover the cost of jute purchases. Working capital requirements varied sharply throughout the year due to the seasonality of the raw jute market, which led most firms to rely on short term bank finance rather than on their own capital. I have followed the *Investors India Year Book* in excluding debenture loans from the gross profits after interest measure. The data for gross profits are taken from the Investors India Year Book for the period 1903-19 but are not available for the preceding period as most firms included interest payments, insurance and commissions as a subcategory of costs on working account, which were not published in annual reports. “Net profit after depreciation” measures the residual profits available for distribution to the shareholders or for reinvestment after firms had met all their external financial obligations, including debenture payments, and had set aside funds to cover the deterioration of their fixed capital. Balances which were frequently carried over by firms from the previous year or half year to smooth dividend payments or for other purposes are excluded from the measure in order to examine performance in a given year.

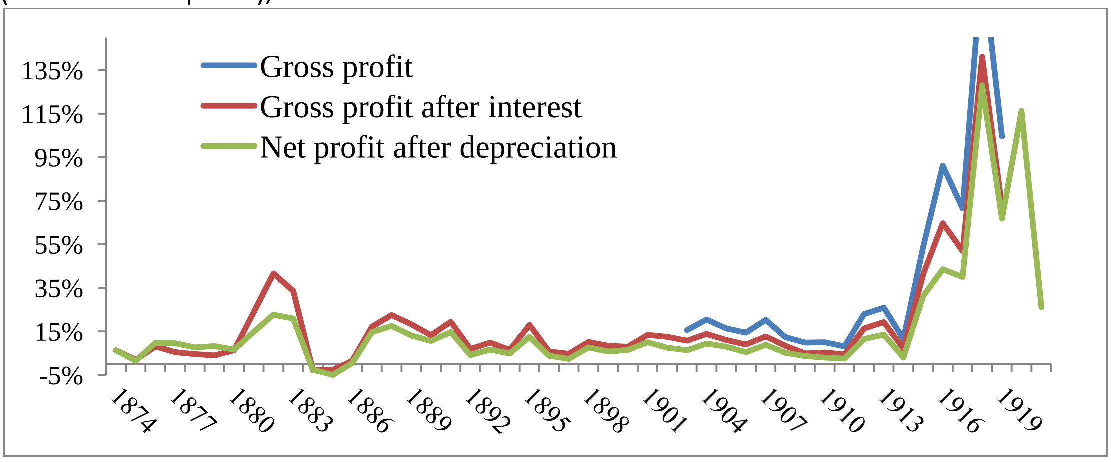
Profitability, returns to gross expenditure on fixed capital, (constant 1873 prices), 1874-1921.



Profitability, returns to net expenditure on fixed capital after depreciation, (constant 1873 prices), 1874-1921



Profitability, returns to net expenditure on fixed capital after depreciation, including reserves, (constant 1873 prices), 1874-1921.



Profitability, return to gross expenditure on fixed capital, %.

	1880s	1890s	1900s	1910s
Gross profit			10.6%	24.3%
Gross profit after interest	11.6%	7.3%	7.2%	17.1%
Net profit after depreciation	7.2%	5.1%	4.8%	13.8%

Profits, return to net expenditure on fixed capital, %.

	1880s	1890s	1900s	1910s
Gross profit			14.0%	40.4%
Gross profit after interest	15.1%	9.3%	9.5%	30.0%
Net profit after depreciation	9.4%	6.7%	6.4%	23.7%

Profits - return to net expenditure on fixed capital including reserves.

	1880s	1890s	1900s	1910s
Gross profit			15.6%	58.5%
Gross profit after interest	16.0%	10.3%	10.5%	42.4%
Net profit after depreciation	10.4%	7.3%	7.1%	34.3%

Managing agency commissions (Figures 1.15 – 1.16, Table 1.9)

Jute Mills in Bengal published in Dundee in 1880 surveyed the level of managing agency commissions charged in the jute industry. In 1904, the newspaper *Capital* (Calcutta) republished a similar survey from the *Indian Textile Journal* (Lokanathan, p. 335). These sources show that managing agents' commissions were generally a fixed percentage of sales revenue or profits. Taken with scattered and fragmentary information in newspapers for the whole period 1870-1919, together with individual data for firms such as the mill companies managed by Thomas Duff & Co. and Finlay Muir & Co., it is possible to estimate the long term trend in commissions as a percentage of sales or of profits for the industry as a whole. From 1880 to 1904, the trend was for more managing agents to charge commission as a percentage of profits rather than as a percentage of sales revenues. Those firms which continued to charge commission based on sales had generally reduced the percentage charged. The firms charging commission as a percentage of profits generally had a fixed income per month which reflected the costs incurred to employ clerical labour for marketing the managed mills' output at their Calcutta offices. In addition they were guaranteed a minimum income in the event of low profits, approximately Rs 20,000 annually for a 500 loom mill - which increased in line with increases in looms employed. This trend suggests that the managing agents were sensitive to the criticism made by shareholders during the crisis years of the late 1870s and mid-1880s – and articulated in the press and Jute Mills in Bengal – that a commission on sales revenue gave them an incentive to maximise sales revenue at the expense of profitability and dividends paid to the shareholders. Weaker managing agents such as Ernsthausen or agents seeking entry to the industry such as Anderson, Wright tended to charge a lower level of commission, suggesting a level of inter-agency competition to attract shareholder loyalty.

To calculate industry commissions paid to managing agents over time, sales-based commissions and profit-based commissions were estimated for the individual managing agents oin the basis of the information above and then aggregated. Although sales data are not known from 1890 for most firms, they can be estimated by calculating individual firms' sales as a proportion of the industry sales, taking the firm's share of total looms in the industry as the proportion. Precise data for gross profits exists from 1903 and are estimated for 1876-1902 based on gross profits after interest on the assumption that the ratio of gross profits to gross profits after interest from 1876 to 1902 was similar to the ratio that is known for the period 1903-1919, when it remained reasonably stable.

Cost Structure (Chapter 2, Table 2.6)

The data available for comparing costs and sales for different firms are limited because the jute mill companies ceased to publish this information in their half-yearly accounts as reported in the newspapers at the end of the 1880s. Annualised costs and value of output data are available for the decade 1879-1888 for 13 of the 20 firms that were in operation for some or all of this period. However, missing data, the high level of attrition of firms in existence at the beginning of the period, the entry of new firms towards the end of the period, differences in hessian to sacking loom ratios and different months used to end the accounting year, make it difficult to draw meaningful inferences from any comparison.

Cost on working account per loom in rupees (constant prices, 1873 = 1), 1879-88.

Mill	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	Average 1879-88
Budge-Budge	3722	-	4931	4674	3959	3307	-	3105	3428	-	3784
Rishra/Calcutt	3623										
Fort Gloster	3883	3535	4025	4205	3962	3969	-	-	-	-	3930
Goosery			3829	4214	4147						
Gourepore	-	-	5079	4375	4135	4473	3695	3048	3489	4091	4019
Hooghly						2581	-	3991	4664	3248	
Howrah	3618	-	4564	5360	5074	-	2401	2838	3393	3014	3565
Seebpore	-	2771	4056	4287	4131	3641	-	2560	3237	2902	3422
Asiatic	-	-	3186	1732							
Union				3007	3614	3495	3123	2724	3239	3026	3176
Barnagore	-	3072	-	-	-	-	-	-	-	-	
Champdany	2385	2863	5146	2793	3524	2990	2418	2668	3120	4005	3170
Ganges	-	4152	-	4737	4625	3886	3885	-	-	-	
India	-	-	5034	4525	-	-	4234	3674	-	6251	
Titaghur							3666	3793	4538	5178	
Weighted average	3385	3245	4622	4111	4054	3285	3175	3073	3542	3871	3780
St dev as % of average	18%	18%	15%	26%	12%	18%	23%	17%	17%	31%	19%

£ denotes Sterling company. – denotes missing data.

Sources: *Jute Mills in Bengal*, half-yearly reports in *Friend of India and Statesman*, *Dundee Advertiser*.

Output value per loom in rupees (constant prices, 1873 = 1), 1879-88.

Mill	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	Average 1879-88
Budge-Budge	4154	-	5827	6038	5345	3080	-	3197	3904	-	4334
Rishra/Calcutt	3551										
Fort Gloster	3619	3423	4452	5519	5152	3769	-	-	-	-	4324
Goosery			4401	5240	4251						
Gourepore	-	-	5637	5878	5469	4623	3905	3194	4277	7542	5050
Hooghly						2112	-	4186	5617	6023	
Howrah	4032	-	5374	6912	6432	-	2265	3000	4154	5464	4461
Seebpore		2941	4593	5293	5052	3438	-	2566	3592	5372	4082
Asiatic	-	-	3240								
Union				3782	4674	4028	3143	2855	4048	5465	3999
Barnagore	-	3321	-	-	-	-	-	-	-	-	
Champdany	2525	3542	6263	3700	3519	3128	2260	3157	3882	4903	3623
Ganges	-	4010	-	5921	5439	3836	3818	-	-	-	4517
India	-	-	5676	4913	-	-	4415	1976	-	5390	4474
Titaghur							3383	3674	4777	6820	
Weighted average	3534	3450	5333	5138	4907	3258	3123	3083	4204	5711	4318
St dev as % of average	18%	11%	18%	19%	17%	23%	26%	20%	15%	15%	18%

Profit on working account per loom in rupees (constant prices, 1873 = 1), 1879-88.

Mill Company	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	Average 1879-88
Budge-Budge	433	-	896	1364	1386	-227	-	92	476	-	550
Rishra/Calcutt	-72										
Fort Gloster	-264	-112	427	1314	1190	-200	-	-	-	-	394
Goosery			571	1026	105						
Gourepore	-	-	558	1503	1334	150	210	146	789	3452	1030
Hooghly						-469	-	194	953	2775	
Howrah	413	-	810	1552	1359	-	-136	162	761	2449	897
Seebpore	-	171	538	1007	921	-203	-	5	355	2470	660
Asiatic	-	-	55	-							
Union				775	1060	533	20	130	809	2439	824
Barnagore £	-	249	-	-	-	-	-	-	-	-	
Champdany £	140	679	1117	907	-4	138	-158	489	762	898	454
Ganges £	-	-82	-	1309	868	-277	29	-	-	-	
India £	-	-	693	1070	-	-515	-208	-101	533	762	319
Titaghur £							-283	-119	239	1642	
Weighted average	149	205	711	1027	853	-27	-52	10	663	1840	538
St dev as % of average	204 %	156 %	43%	89%	61%	1248 %	323 %	1872 %	36%	51%	94%

Compared to the data on profitability and share prices, there is a paucity of data after 1888 available to analyse the relative efficiency and productivity of individual firms in the industry. Working account data – detailing firm income from sales and expenditure on discrete inputs – has survived for the Titaghur Jute Company during the 1880s and 1890s. I have reconstructed the working accounts of the Thomas Duff & Co. mills based on monthly statements published in the minute books of meetings of the directors. Similar data to that depicted for the 1880s above exists for the Champdany mill managed by Finlay, Muir & Co., (1874-1921), the Alliance and Alexandra mills managed by Begg Dunlop & Co., (1910-20), and the Angus mill managed by Bemis & Co., (1913-21), but I have not been able to obtain this type of data for Birds, Andrew Yule, and Jardine Skinner, Thomas Duff & Co.'s main competitors. The data above are combined in **Figures 2.1 – 2.2 and in Table 2.7 in Chapter 2**.

Weighting for variations in the use of hessian and sacking looms over time and between firms

Do the differences in hessian to sacking loom ratios depicted in Table 2.5 lead to systematic biases in the commensurability of the cross-section and time-series data considered in Chapters 1 and 2? Given that most firms adopted similar proportions of hessian to sacking looms over time, it is unlikely to have a serious impact on the cross-section data in any given year comparing firm performance in Chapter 2. Over time, the objections of bias may be more serious. Evidence obtained from reconstructing the monthly working accounts of the mills managed by Thomas Duff & Co, Samnuggur 1 & 2 mills combined, Titaghur no 1 mill, and Titaghur no 2 mill (see **Table 1.4**), can be used to calculate the jute raw material costs, the overhead working costs, and the sales revenue on a per loom basis, for hessian and sacking looms respectively. The evidence from the Samnuggur and Titaghur companies shows substantial differences between hessian and sacking costs and output values/ sales income per ton of input-output, which might be expected to be reflected in similar differences measured on a per loom basis, given that hessian looms were wider than sacking looms. However, the actual results measured on a per loom basis are counter-intuitive. Despite requiring more expensive raw materials and more labour to operate the looms, hessians were a lighter product, manufactured with a single thread warp and finer yarns, where sackings used a double- or triple-thread warp and thicker yarns. (Warp is the set of lengthwise yarns that are held in tension on a frame or loom. T Woodhouse & Kilgour, P, *The Jute Industry; from Seed to Finished Cloth* (London, 1921), pp. 99-105.) This characteristic has the effect of largely equalising the differences in costs per ton and sales income per ton of hessians relative to sackings when measured on a per loom basis. Across the three Thomas Duff mills for the period 1904-1914, total hessian costs per loom averaged 92% of the average for all looms. Hessian sales income per loom averaged 95% of the average for all looms. The different percentages for costs and sales income *per ton* entailed that hessians were significantly more profitable than sackings. The differences in per loom figures for hessians and sackings for the three mills were insignificant and the values over time were relatively stable. While the relative prices of hessian and sacking inputs and outputs fluctuated at the margin – and the previous chapter presented evidence of a significant improvement in the efficient utilisation of hessian looms during the 1890s – it is reasonable to infer that the figures above for the Thomas Duff & Co mills are representative for the whole industry throughout the period 1870-1921. Differences between firms in terms in employing hessian and sacking looms can only explain a small part of the total variation in performance across firms when measuring costs and sales per loom.

Measuring costs, sales and output

1) Raw jute and price indices.

Price differentials were not simply a function of additional shipping costs but reflected the fact that raw jute was not a uniform product. Higher quality jute tended to be exported in order to account for deterioration in the course of shipping so that the jute was of the requisite quality to enter the manufacturing process upon arrival at its destination. The lack of uniformity of the raw material was reflected by the variety of permutations in which different categories of raw jute – ‘baled and loose’, ‘jute, rejections and cuttings’ – were combined in the initial batching and preparing process for the purpose of spinning. Bales of raw jute typically comprised an ‘assortment’ of ‘high’, ‘medium’ and ‘low’ quality jute ready to be combined for batching. Moreover, in the calculation of price indices, price differentials reflect the variegation and hierarchy of stages within the jute marketing process from field to factory – a process that would often involve several commodity exchanges and prices - not a single sale/purchase. This lack of uniformity extended across time too, both within the course of a jute season and from year to year. Thus jute quality was indicated by assigning ‘marks’ to different qualities of jute as a guide to buyers and sellers in determining market prices. Some marks became more trusted over time as a consistent and reliable designator of price. However, during the course of a jute season, there was always a marked deterioration in quality within each mark over time that was factored in to the price calculations of buyers and sellers. Moreover, as Goswami, points out in *Industry, Trade and Peasant Society*, there was a general trend from year to year of deterioration in the quality of marks and the invention of new, higher-grade marks. This process was by no means a disinterested one of seeking to impartially designate quality but was necessarily a process in which the changing balance of asymmetrical relations of market power between buyer and seller, between the peasant, the village moneylender and jute trader, and the European managing agent, were condensed and crystallised.

Consider the selection of spot prices and annual average prices for raw jute collated in the table below.

Figure: Raw jute prices (constant 1873 prices), rupees per ton (all spot prices for January, all averages January-December, (2) Jute, Bengal, first assortment (average of maximum prices)).

YEAR.	(1) Jute, picked (Calcutta)	(2) Jute, Bengal, first assortment	(3) Average all classes, Naraingunge	(4) Fine Naraingunge	(5) Export price	(6) Estimate of price of jute imported into Calcutta	(7) Samnuggur No. 1 mill	(8) Differential between (7) and (6)	(9) Samnuggur Co price of jute in stock
1873	102	146			112				
1891	107	138			105	103	102	-11%	
1892	182	142			112	102	105	7%	106
1893	152	159			119	110	110	-4%	
1894	202	171			131	100	125	24%	112
1895	149	167			142	96	113	15%	
1896	137	151			117	92	71	-28%	116
1897	135	125			127	69	96	35%	71
1898	125	135			119	77	110	26%	89
1899	143	141			143	98	128	19%	113
1900	137	134	136	145	138	94	91	0%	103
1901	137	141	132	143	135	86	93	8%	104
1902	142	145	132	147	139	95	95	-4%	113
1903	170	156	142	155	101	102	118	13%	130
1904	169	164	152	163	106	111	127	11%	
1905	170	171	161	172	131	126	137	5%	151
1906	184	195	184	203	126	150	152	-3%	182
1907	265	214	184	245	117	115	160	37%	151
1908	141	174	140	211	129	94	110	17%	119
1909	133	144	126	167	138	95	108	11%	118
1910	136	144	128	155	150	114	116	-4%	132
1911	202	179	157	191	170	130	136	2%	144
1912	177	192	171	205	203	132	134	2%	145
1913	209	214	207	246	155	155	153	-6%	176
1914	279	232	224	251	127	117	150	32%	111
1915	166	202	176	199	128	105	113	6%	109
1916	188	184	148	188	154	117	141	14%	128
1917	205	184	144	167	175	99	132	30%	108
1918	138	165	123	125	178	106	114	3%	100
1919	177	161	117	119	210	143	100		85
1920	167	185					93		78
1921	205						83		83
Average								**9%**	
St dev								**15%**	

Source: Column (1), Government of India, Collated from Statements No. 202 (1905), No. 209./ No. 199 (1922) 'Wholesale prices of staple articles of export and import'; (2), GOI, No. 204 (1905), No. 211. (1922) 'Average annual wholesale prices of staple commodities in Calcutta'; (3) & (4), G. H. Le Maistre, *Investors India Year Book, 1920* (Calcutta, 1921), p. 114, "Area under Jute, Outturn and Prices, 1900-19. Average price per 400 lbs of Naraingunge jute."; (5)-(6) derived from GOI trade accounts; (7)-(9), MS 86/1, Samnuggur Jute Co.

In considering the data above, it should be borne in mind that they have been adjusted to estimate January-December averages for the purpose of comparison by assuming that prices changed smoothly from month to month, which is clearly unrealistic. The original data from the *Investors India Year Book* from which columns (3) and (4) are derived are for average prices during the jute season running from July to June. The original data from the Government of India trade statistics from which columns (5) and (6) are derived are for average prices running from April to March.

Column (1) presents a series of spot prices on January 1st - the mid-point in the jute season - published in Government of India price series for staple commodities. In most years, the January price would give a reasonable indication of the average annual price as prices tended to rise or decline throughout the course of a season, although purchases were more heavily concentrated in the months from September to November. It records the price of “picked jute” exported from Calcutta. Column (2) represents an annual “average of the maximum [presumably maxima for respective months] prices” for “Bengal, first assortment” jute, i.e. the first mark of the season that baled together a combination of high, medium and low grade jute. I assume these are annualised by jute season and have adjusted them accordingly to obtain January to December values. Columns (3) and (4) give average annual prices for all classes of Naraingunge and of fine Naraingunge jute respectively. Naraingunge, near Dacca, had become the dominant jute emporium of the mofussil by the 1890s and was home to the baling operations of large operators such as Rallis and Davids and the preferred port of call of the Calcutta mills for obtaining jute of reliable quality. The prices given in columns (5) and (6) are derived from Government of India trade statistics for the values and volume of jute exported and of jute imported into Calcutta respectively. Figures for the value of jute imported into Calcutta are only given for the years 1890-99, during which period they averaged 74% of the export value, but with a standard deviation of 7%. The values for the remaining years are then calculated at 74% of the export value but clearly the estimated value in any given year is likely to be subject to some margin of error.

It is necessary to pause to consider what is connoted by this latter price in order to explain this price differential. While there is no explanatory note accompanying the Government of India trade data, this price series is given in the accounts of the rail and river-borne trade for imports into Calcutta. It is possible, therefore, that this is in fact the price obtaining for jute purchased in one of the upcountry jute emporia and that the differential with the price of exported jute consists of the rail and river freight costs obtaining between sales in upcountry markets and the arrival of raw jute in Calcutta, which a priori, it seems logical to assume were proportionally much greater than shipping freight costs for export. Further research is required to account for the weight of transport costs in the price of jute consumed by the Calcutta mills. This leaves open the question of what alternative price series might better be used to calculate the cost of raw jute consumed by the Calcutta mills. As one would expect, the average prices given in columns (1)-(4) for different categories of raw jute lie somewhere in between the export price (5) and the 'upcountry' price (6), and are more closely correlated to (5) at the beginning and (6) at the end of the period, presumably reflecting the increasing weight of Calcutta mill demand relative to export demand.

My estimates of the price of jute consumed by the Samnuggur Company given in column (7) actually correlate better to the upcountry price (6) than to the average prices in columns (1) to (4) – the average price differential is 9% with a standard deviation of 15%. There are wide discrepancies between the price of jute consumed by the Samnuggur Co (7) and the price of its raw jute stocks (9). The latter is the more reliable figure as the quantities of jute consumed in order to calculate (7) are derived from an assumption that the percentage of total jute consumed that was wasted in the manufacturing process gives an accurate indication of jute purchased, (i.e. quantities of raw jute consumed are derived from data given for the weight of manufactured output). This disparity requires further exploration to see if it consistently reflects the time lag between jute consumed and jute purchased for stock and price differences from the end of one season to the start of the next. I return to this issue below after considering problems with the sales and output data. There appear to be limitations as to what can be inferred about the industry's jute costs from firm-level data.

2) Sales and Output

Jute mills outside the Calcutta metropolitan area represented a negligible proportion of total consumption and production of jute and jute manufactures so the all-India trade statistics were taken to accurately represent the Calcutta industry. This is confirmed by cross referencing the data for the quantity of jute manufactures produced given in the trade statistics with data provided from the mid-1890s by the Indian Jute Mills Association for the Calcutta mills, which are consistent. Government of India returns were based on an official year from April 1st to March 31st while IJMA annual figures for production of jute manufactures were calculated on the basis of twelve months from January to December. IJMA figures for raw jute consumption by the mills were calculated on the basis of the jute "season" which ran from July 1st to June 30th. However, these differences should not substantially bias estimates of the long term trends.

The series for the quantity of raw jute consumed was calculated for the period 1875-1889 by aggregating the returns collected from individual mills by the Government of India. An estimate for consumption by the industry was then calculated by calculating estimates for those firms which did not return a figure based on the average consumption per loom in a given year weighted by that mill's average jute consumption in years for which returns exist compared with the industry average. The coverage of Government of India returns was low during the late 1870s but was fairly comprehensive during the decade of the 1880s. Thus, my estimate of the industry's consumption of raw jute becomes more reliable over time. The

Government of India ceased collecting data for jute consumed by the mills from 1889. The Indian Jute Mills Association provided figures for raw jute consumed by the mills based on data collected from their membership from 1896, with averages provided for the three-year period from 1893-5. The figures slightly underestimate the total for the industry as they do not include jute consumed by the small Indian-owned Arathoon or Soorah mills which remained outside the IJMA. It is not possible to construct a series for the price of raw jute consumed by the industry in a given year with the same confidence as the series for quantity. No reliable data exists for average annual prices weighted according to quantities purchased. Purchases were concentrated heavily between September and December. Raw jute purchased by the mills in a given year at a given price could differ substantially from the raw jute actually consumed through the mediation of stocks carried over from previous years.

With these caveats in mind, the best estimate available of the long term trend is derived from the price of raw jute exported abroad. Prices for raw jute imported into Calcutta were derived from the values and quantities given in Government figures during the 1890s but discontinued thereafter. A comparison of the Calcutta price with the equivalent price of jute exported abroad for these years shows that the Calcutta price was on average 74% of the price of exported jute, varying between 65% and 86% in any given year, (although, there were years in which Dundee newspapers reported that the price of raw jute in Dundee was actually lower than in Calcutta due to the vagaries of market forces and the mistaken expectations of speculative purchasers). Presumably, freight and insurance costs – and the higher quality of jute exported – accounted for the difference. My crude estimate of the trend calculated the Calcutta price of raw jute for 1875-90 and 1900-21 at 74% of the price for exported jute. My estimate accords closely with the average prices of Naraingunge marks of raw jute from 1900-1919 published in the Investors India Year Book – within 10% in 14 out of the 20 years. Using the estimated price series, the trend in the value of jute consumed can be calculated for the purpose of comparison with the trend in the value of sales and output of jute manufactures.

It is necessary to focus on 'real' magnitudes measured by an external observer where possible in order to consider the degree in which other variables under consideration that derive from the aggregation of individual firms' accounts may be biased by the interested nature of the process whereby the firm presents variables in its annual accounts that may be fictitious for purposes that benefit the firm at the expense of the objective presentation of its real performance. Specifically, my discussion of firm performance and profitability relies on profits as reported in firm accounts but I have been cautious to pursue an examination of relative costs and revenue data deriving from Government of India trade data and IJMA data. I have presented a juxtaposition of the long term trend in sales and raw jute costs while avoiding making direct comparisons in specific years or seeking to compare them in order to derive estimates for, say, labour costs.

The quantity and value of sales of jute manufactures are based on Government of India figures for exports to foreign countries and for Indian coastwise trade including Burma. Figures for inland trade by rail and river and for local consumption in Calcutta have not been included as there is no consistent series available and this category of sales only formed a small and rapidly declining proportion of the total, about 3 % in the 1870s declining to a negligible proportion. The Government of India data for quantities of jute manufactures sold are consistent with the data published by the IJMA from 1892. The Government data records the quantities of sacking manufactures sold measured in bags and of hessian cloth sold measured in yards but provides no aggregate measure in uniform units.

The discussion relating to sales and output Chapter 1 assumed that sales data derived from the Government of India trade statistics represented a reasonably robust proxy for output. Further analysis of individual firm data for inventories of manufactured goods reported in end-of-year account broadly confirms this hypothesis, with the caveat that inventories represented a 'significant' magnitude in a few years where the industry was affected by crisis and weak demand at the beginning of the period of study, and again during the war years when scarcity of shipping and freight, and time lags and uncertainty surrounding government orders of war supplies again led to a large build-up of inventory.

Sales, inventory, estimated output, (constant 1873 rupees**).**

	Estimated inventory of cloth & bags	Change in value of inventory	Value of sales (Government of India trade statistics) (Rs)	% difference between output and sales	Estimate of output value (Rs)
1875	2,075,283				
1876	1,014,606	-1,060,677	12,819,900	-8.3%	11,759,223
1877	797,693	-216,912	11,093,869	-2.0%	10,876,956
1878	1,416,673	618,980	11,870,269	5.2%	12,489,249
1879	1,901,742	485,069	13,730,293	3.5%	14,215,362
1880	987,809	-913,933	17,233,189	-5.3%	16,319,256
1881	1,524,468	536,659	20,562,715	2.6%	21,099,374
1882	1,867,979	343,512	25,300,433	1.4%	25,643,944
1883	2,385,039	517,059	22,919,694	2.3%	23,436,753
1884	1,234,200	-1,150,838	21,850,653	-5.3%	20,699,815
1885	2,153,523	919,323	17,693,653	5.2%	18,612,976
1886	1,342,594	-810,928	19,499,803	-4.2%	18,688,875
1887	1,403,376	60,781	28,364,742	0.2%	28,425,523
1888	2,076,939	673,564	34,579,151	1.9%	35,252,714
1889	1,819,692	-257,247	33,977,393	-0.8%	33,720,146
1890	1,401,815	-417,877	33,793,598	-1.2%	33,375,721
1891	1,368,998	-32,817	35,568,322	-0.1%	35,535,506
1892	1,987,102	618,105	35,550,720	1.7%	36,168,824
1893	1,773,036	-214,066	37,837,890	-0.6%	37,623,824
1894	2,111,000	337,964	46,438,796	0.7%	46,776,760
1895	2,036,448	-74,553	52,995,345	-0.1%	52,920,793
1896	1,906,535	-129,913	50,957,669	-0.3%	50,827,756
1897	2,101,874	195,339	49,456,151	0.4%	49,651,490
1898	2,121,278	19,404	57,181,644	0.0%	57,201,048
1899	2,512,448	391,170	63,305,339	0.6%	63,696,508
1900	2,371,950	-140,498	66,642,457	-0.2%	66,501,959
1901	3,837,754	1,465,804	74,614,692	2.0%	76,080,496
1902	3,807,033	-30,721	84,136,144	0.0%	84,105,423
1903	3,029,897	-777,136	92,258,543	-0.8%	91,481,408
1904	3,366,614	336,717	100,162,339	0.3%	100,499,056
1905	4,958,448	1,591,834	106,500,200	1.5%	108,092,034
1906	6,841,060	1,882,613	114,729,828	1.6%	116,612,440
1907	6,116,647	-724,413	127,672,432	-0.6%	126,948,019
1908	4,871,712	-1,244,934	101,225,882	-1.2%	99,980,947
1909	3,503,088	-1,368,624	121,754,826	-1.1%	120,386,202
1910	3,920,738	417,650	128,621,664	0.3%	129,039,314
1911	3,151,665	-769,074	117,500,727	-0.7%	116,731,653
1912	5,768,437	2,616,772	147,416,610	1.8%	150,033,382
1913	5,813,252	44,815	172,717,259	0.0%	172,762,075
1914	5,355,253	-457,999	149,390,053	-0.3%	148,932,054
1915	10,517,842	5,162,588	217,718,969	2.4%	222,881,557
1916	10,643,832	125,990	233,287,983	0.1%	233,413,973
1917	16,944,696	6,300,864	241,093,714	2.6%	247,394,579
1918	17,746,735	802,039	261,382,122	0.3%	262,184,161
1919	8,994,349	-8,752,386	260,140,001	-3.4%	251,387,614

The table demonstrates the structural break that occurred after the crisis of weak demand of the mid-1880s. In the 11 years from 1886, the positive or negative difference between sales and output averaged 4.1% due to mismatched supply and demand. For the whole period 1887 to 1919, the difference average 0.9%, suggesting that the claims made by the Indian Jute Mills Association to have managed increases in supply to match increased demand had some foundation.

Measuring the Volume of Sales and Output

The IJMA published three series for the volume of sales of jute manufactures, one for total “baggings” to the foreign and domestic markets expressed in uniform units, one for total hessian and total sacking sales and also HC Bose & Co.’s statement for sales of different products to different markets by different shippers. The latter statement provides a figure for the volume of total sales measured in “bags” which calculates a yard of hessian cloth as equating to between 84-88% of a sacking bag, presumably based on weight, suggesting that the figures for sacking bags were also standardised by weight. These figures are consistent with the statement for total baggings in the first IJMA series. On this basis it is possible to extrapolate from the IJMA data to the Government of India data to calculate a uniform measure of total sales of sacking and hessians measured in uniform “bags” in order to observe the change over time.

Unfortunately, I have not been able to locate any explanation of what weight was used as the basis to calculate a standardised unit of bagging. Therefore, it is not possible to calculate the actual weight of sales of jute manufactures for the purpose of comparison with the weight of raw jute used to manufacture them.

Two sources give disaggregated data for sales of different product lines of cloth and bags of varying weight. From its inception in 1885 until its abandonment in 1889, the IJMA published a weekly sales list for approximately 60 categories of bag and 15 categories of cloth, specifying the weight of each category. Bag sales were overwhelmingly of cheaper sacking quality and cloth sales of dearer hessian quality. The sales list was republished in the *Dundee Advertiser* and *Dundee Courier*. Taking sales during the course of 1888, the average bag weight was 1.90 lbs and the average weight of a yard of cloth 0.64 lbs. From 1906 onwards, the IJMA annual report published HC Bose's annual statement of "Actual clearances of jute fabrics from Calcutta to all places during 12 months ending December". This statement included a breakdown of bags exported to foreign markets excluding East Asia and of cloth exported to the Americas, Australia, London and Liverpool. The average bag weight in peacetime years was 1.91 lbs, varying between 1.82 lbs in 1913 and 2.00 lbs in 1921. In the three wartime years 1915-17 for which data are available, the average bag weight declined dramatically in the range from 1.16-1.48 lbs due to huge government orders for hessian sandbags. The average weight of a yard of cloth was .65lbs with very little year to year variation. The Bose charts do not distinguish between different weights of hessian cloth, by far the largest component of total cloth sales. Hessian cloth specifications varied between 0.5 lbs per yard and .75 lbs per yard. I have assumed sales of different specifications were in the same ratio as for 1888, giving an average weight of 0.64 lbs per hessian yard. Based on the almost exact correlation between the 1888 bag weights and those for 1906 onwards, the weight of industry sales for the whole period to 1905 using the 1888 figures could be estimated for future research.

Once the weight of output is calculated, it permits estimation of value added in the manufacturing process and of changes in the efficiency of processing the raw material by reducing wastage in the manufacturing process, a key variable affecting profitability.

'Wastage' of raw jute inputs

Having estimated the weight of industry sales, it is then possible to estimate the weight of industry output based on the value of the change in industry inventory of manufactured goods discussed above. This produces a striking result in the table below showing a very large discrepancy between the weight of raw jute 'consumed' (or at least purchased) by the mills and the weight of output.

Discrepancy in weight of raw material relative to output.

	1870s	1880s	1890s	1900s	1910s	1870-1921	1892-1921
Discrepancy (GOI)	34%	36%	25%	20%	17%	25%	
Discrepancy (IJMA)			30%	23%	18%		23%

Both estimates of industry output – derived from Government of India and the IJMA data for sales – show a consistently large discrepancy relative to raw jute consumed. Some discrepancy is to be expected due to the wastage of raw jute in the manufacturing process. The monthly accounts of the mills managed by Thomas Duff & Co. assumed a shrinkage of jute of 13% up to 1895, declining to 8% to 1902, and then 5% from then onwards, (Samnuggur Co., MOTD, MS/86/1/1/5, Samnuggur Co, 29 Jan 1896, 3 Jun 1902.) Allowance was made separately for a "gunny surplus" for shrinkage in the weight and breadth of finished bags of 1 inch per bag, later reduced to half an inch per bag. (Ibid., 3 Jun 1902.) The Champdany Co.'s studies of wastage from 1881-86 calculated an annual wastage for the Wellington branch mill in a range between 9.74% and 13.65% "from jute to cloth". A proportion of this shrinkage in weight could be assigned to waste of jute from the point when it entered the manufacturing process when it was weighed for batching to the point where the finished goods emerged after weaving and finishing. The Champdany mill manager Crabbe, writing in 1887, referred to a study at the mill "some years ago" of waste of jute in process running at 9%, "between preparing and spinning 6%; between spinning and weaving 3%." Struth, the Wellington mill manager, calculated waste at 10.6%, of which 8.1% was "jute dust thrown out", and 2.4% was "thread waste" that was unsuitable for reuse, stating that these figures were no worse than those for the Howrah mill which he had obtained. (Crabbe, Special Report on Champdany mill, MOTD, Champdany Co., UGD MS 91/7/1/2/2/3, MOTD 1883-89, 16 Feb 1887.) A similar study by the Samnuggur Co. in

1894 showed “that the waste swept up and burned amounted to 5.89% of the jute used, but the difference between the weight of the jute used and the weight of cloth and twine produced is equal to 9.2%.” (MS 86/1/1/4, Samnuggur Co, MOTD, 2 May 1894, p. 360). This discrepancy may point to a further component in the shrinkage in weight of jute from the point of purchase to the point of sale of the finished good, loss of weight due to moisture that may have occurred from the point in time when mills made purchases of raw jute and the point when it entered the production process, having been stored for varying periods of time as stock in the mills’ jute godowns. In the Champdany report referred to above, Crabbe goes on to state:

“We are quite aware of the fact that there is little waste in Dundee mills, but it must be remembered that they use only dry jute there, whilst we use at the beginning of the season jute having moisture of 12 or 13%, or say with 5% moisture all the year round. Add to this the fact that we have a very different climate here to contend with.”

This point is interesting in that it may have led the Dundee competitors to overestimate the cost advantages enjoyed by the Calcutta mills (See Seafield Works, Dundee, comparison of costs – UDA MS 95-12-2). Moreover, Crabbe’s point relating to the uneven distribution of moisture content over the course of the jute season seems to give credence to the notion that loss of weight could occur between the point of purchase and the point of production as no allowance for seasonal variation was made in the wastage allowance in the production process proper by the mills managed by Thomas Duff & Co. (The seasonal variation is confirmed by the monthly figures provided for the Wellington mills from 1881-86 in UGD MS 91/7/1/2/2/2-3, MOTD 1873-79, 1883-89).

The problem of raw jute purchases with a high moisture content seems to have been particularly pronounced for certain varieties of cuttings such as Dowrah jute, with a moisture content of 20% being referred to in extreme cases, but these varieties were never made up a very large proportion of the total raw jute consumed. (Struth, report on Wellington mill, ibid;

James Luke, visiting director's report, UGD 91/1/2/2/3, MOTD, Champdany Co., 28 Mar 1888; Samnuggur Co., MS 86/1/1/8, MOTD, 5 Aug 1902, p.255.) Jute purchased on the open market in the Calcutta bazaar was also maligned for its reputation for a high moisture content, leading the mills' managing agents' to seek direct contracting relationships with agents at the main upcountry marts, such as Naraingunge and Serajgunge, who dealt in raw jute:

> "the purchases advised by mail still showed a considerable percentage of dowrah and bazaar jute which while apparently cheaper on paper, [the agents] did not consider equal value in the working, taking into consideration the heavy wastage and moisture found in this jute, besides the relatively poorer spin which it gives and also the risk of trouble with the workers [paid by piecework]." (MS 86/1/1/8, Samnuggur Co, MOTD, 30 Sep 102, p. 297.)

Mill agents' complaints about moisture were a staple of the British business press in Calcutta ("Calcutta Jute Market", *Dundee Courier*, 25 Sep 1894, p. 4) although there were established procedures to claim compensation for jute failing to meet agreed quality standards for moisture, adjudicated by the Bengal Chamber of Commerce, which tended to favour the IJMA against intermediaries dealing in raw jute.

This digression is not to explore these relationships in the jute value chain but it does establish that the existing data for raw jute consumed, whether derived from Government of India or IJMA sources, must be interpreted with some care in so far as it can be taken to accurately represent the weight of raw jute entering the manufacturing process. From firm-level data in company records, there appeared to be no standard practice for measuring loss of weight at different stages from point of purchase to the sale of the finished good.

In conclusion, the hypothesis that a large part of the discrepancy in the weight of the industry's purchases of raw jute relative to the weight of the output of manufactured goods can be accounted for by a combination of moisture and wastage in the production process cannot be discounted. However, an average of 23-25% discrepancy seems large compared to the qualitative evidence available for the Champdany and Samnuggur mills. The declining trend in the discrepancy between the weight of raw jute consumed and the weight of output is striking. According to the Government of India data, it declined by half from 34% in the 1870s to 17% in the 1910s. The trend is mirrored in the IJMA figures, declining from 30% in the 1890s to 18% in the 1910s. With the caveats already mentioned in relation to the accuracy of the data, the consistency of the trend from two alternative sources might be taken to suggest that there was some increase in the market power of the jute mills in their interventions in the raw jute market, especially when the widespread complaint observing a long term secular decline in the quality of jute is taken into consideration. Goswami interprets the complaint as essentially a ruse by the mill companies to force raw jute dealers to accept lower quality marks being assigned to jute of a standard quality in order to reduce the mills' raw jute costs at their expense. It seems plausible that some deterioration in quality may have in fact occurred, given the extension of jute cultivation to more marginal lands without discounting the substance of Goswami's observation.

The data on wastage for the Samnuggur mill, managed by Thomas Duff & Co, also suggests that the Calcutta mills learned to adapt production techniques transferred from Dundee to Calcutta conditions in order to reduce wastage in the production process.